

**ST. JOSEPH'S COLLEGE (AUTONOMOUS)  
Jakhama, Nagaland**



**Syllabi  
Under Graduate and Post Graduate Programmes  
Under Choice Based Credit System  
First Edition  
2019-2020**

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# **Under Graduate Section**

**St. Joseph's College (Autonomous), Jakhama  
Kohima, Nagaland**

**Department of Economics  
(CBCS Course Structure)**

**Syllabus for B.A. (Hons.) Economics**

**Course Structure for B.A. (Hons.) Economics**

There are a total of fourteen economics core courses that students are required to take across six semesters. All the core courses are compulsory. In addition to core courses in economics, a student of B.A. (Hons.) Economics will choose four Discipline Specific Elective (DSE) courses. The Discipline Specific Elective (DSE) Courses are offered in the fifth and sixth semesters. It is recommended that each college should offer at least three Discipline Specific Elective (DSE) Courses in the fifth and sixth semesters to allow the students some minimal element of choice. The syllabi for the Discipline Specific Elective (DSE) Courses are provisional and subject to revision.

**Contact Hours:** Each course has 5 lectures and 1 tutorial (per group) per week. The size of a tutorial group is 8-10 students.

**Note on Course Readings:** The nature of several of the courses is such that only selected readings can be specified in advance. Reading lists should be updated and topic-wise readings should be specified at regular intervals, ideally on an annual basis.

**Eligibility for admission to B.A. (Hons) Economics:** Given the quantitative requirements of the program, only students who have passed mathematics at the Class XII level are eligible for admission.

**St. Joseph's College (Autonomous), Jakhama**  
**Choice Based Credit System (CBCS)**  
**Economics Honours**  
**Course Structure**

Semester	Core Course (C)(14)	Ability Enhancement Compulsory Course (A)(2)	Skill Enhancement Course (S)(2)	Discipline Specific Elective (D)(4)	Generic Elective (G)(4)	Credit
<b>I</b>	ECC 1.1 Introductory Microeconomics	EGA 1.3 English Communication			ECG 1.4 Introductory Microeconomics	<b>20</b>
	ECC 1.2 Mathematical Methods for Economics-I					
<b>II</b>	ECC 2.1 Introductory Macro Economics	ESA 2.3 Environmental Studies			ECG 2.4 Introductory Macroeconomics	<b>20</b>
	ECC 2.2 Mathematical Methods for Economics-II					
<b>III</b>	ECC 3.1 Intermediate Microeconomics- I		ECS 3.4 Working with Advance Excel		ECG 3.5 Indian Economy-I	<b>26</b>
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	ECC 3.3 Statistical Methods for Economics					
<b>IV</b>	ECC 4.1 Intermediate Microeconomics- II		ECS 4.4 Data Analysis		ECG 4.5 Indian Economy - II	<b>26</b>
	ECC 4.2 Intermediate Macroeconomics-II					
	ECC 4.3 Introductory Econometrics					
<b>V</b>	ECC 5.1 Indian Economy-I			ECD 5.3 Money and Financial Markets		<b>24</b>
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	ECC 6.2 Development Economics-II			ECD 6.4 International Economics		
<b>Credit</b>	<b>14×6 =84</b>	<b>2 ×2 =4</b>	<b>2× 2 = 4</b>	<b>4 ×6 =24</b>	<b>4 ×6 = 24</b>	<b>140</b>

**Economics**  
**Core Course 1:**  
**INTRODUCTORY MICROECONOMICS**  
**Paper- ECC 1.1**

**Course Description**

This course is designed to expose the students to the basic principles of microeconomic theory. The emphasis will be on thinking like an economist and the course will illustrate how microeconomic concepts can be applied to analyze real-life situations.

**Course Outline**

**Unit-1: Exploring the subject matter of Economics and Price Mechanism (25 Marks)**

Why study economics? Definitions, Scope and method of economics; the economic problem: scarcity and choice; the question of what to produce, how to produce and how to distribute output. Science of Economics; Economic system of India; prices: determination, equilibrium between demand and supply –changes in market equilibrium. Price mechanism.

**Unit-2: Supply and Demand: How Markets Work (25 Marks)**

Markets and competition; determinants of individual demand/supply; demand/supply schedule and demand/supply curve; market versus individual demand/supply; shifts in the demand/supply curve, demand and supply together; elasticity and its application; consumer surplus; producer surplus and the efficiency of the markets.

**Unit-3: The Households (25 Marks)**

The consumption decision - budget constraint, consumption and income/price changes, demand for all other goods and price changes; description of preferences (representing preferences with indifference curves); properties of indifference curves; consumer's optimum choice; income and substitution effects, theory of consumer behaviour.

**Unit-4: Input Markets (25 Marks)**

Labour and land markets - basic concepts (derived demand, productivity of an input, marginal productivity of labour, marginal revenue product); demand for labour; input demand curves; shifts in input demand curves; competitive labour markets; and labour markets and public policy.

**Readings**

1. Karl E. Case and Ray C. Fair, *Principles of Economics*, Pearson Education Inc., 8<sup>th</sup> Edition, 2007.
2. N. Gregory Mankiw, *Economics: Principles and Applications*, India edition by South Western, a part of Cengage Learning, Cengage Learning India Private Limited, 4<sup>th</sup> edition, 2007.
3. Joseph E. Stiglitz and Carl E. Walsh, *Economics*, W.W. Norton & Company, Inc., New York, International Student Edition, 4<sup>th</sup> Edition, 2007.

**Economics**  
**Core Course 2**  
**MATHEMATICAL METHODS IN ECONOMICS – I**  
**Paper- ECC 1.2**

**Unit I: Sets and Functions**

**(25 marks)**

Sets and set operations; types of sets, venn diagram and its application in Economics. Functions: elementary types of functions: quadratic, polynomial, power, exponential, logarithmic; and its application in Economics, system of equations and inequalities in market equilibrium.

**Unit II: Number System**

**(25 marks)**

Uses of numbers; axiomatic properties of real number and completeness. Analytical geometry: application of straight line, points and lines, slope of the line curves, circle, distance and section formulas.

**Unit III: Matrix and Determinants**

**(25 marks)**

Matrix- meaning, types of matrices, operation of matrices. Determinants- meaning and its properties. Solution of simultaneous equation through Cramer's rule and matrix methods.

**Unit IV: Linear Programming**

**(25 marks)**

Concepts and formulation, solution of linear programming through graphs. Input-output analysis, Solution of input-output analysis through matrix.

**Readings**

1. Chiang, A. C. (2000), *Fundamental Methods of Mathematical Economics*, McGraw-Hill, New Delhi.
2. Monga, G. S. (2009), *Mathematics and Statistics for Economics*, Vikas Publishing House Pvt. Ltd..
3. Sydsaeter, K. And P. Hammod (2002), *Mathematics for Economic Analysis*, Pearson Educational Asia, Delhi.
4. Yamane, T. (2011) 2<sup>nd</sup> edition, *Mathematics for Economists: An Elementary Survey*, PHI Learning Private Limited, New Delhi.

**Economics**  
**Core Course 3**  
**Introductory Macroeconomics**  
**Paper- ECC 2.1**

**Course Description**

This course aims to introduce the students to the basic concepts of Macroeconomics. Macroeconomics deals with the aggregate economy. This course discusses the preliminary concepts associated with the determination and measurement of aggregate macroeconomic variable like savings, investment, GDP, money, inflation and the balance of payments.

**Course Outline**

**Unit-1: Introduction to Macroeconomics and National Income Accounting (25 Marks)**

Nature and Scope Macroeconomics; Concepts and Measurement of National Income. Difficulties in the measurement of national income; Factors determining national income. Importance of national income. Circular Flow of income-Two sector economy, Three Sector closed economy, four sector open economy

**Unit-2: Money (25 Marks)**

Money-Definitions of Money, money and near money, inside and outside money, Functions of money; quantity theory of money- cash transaction and cash balance approach; Keynes's Reformulated quantity theory of money; determinants of money supply; High powered money and money multiplier; Measures of money supply in India .

**Unit-3: Inflation (25 Marks)**

Concept of Inflation, Deflation & Reflation and disinflation; types of inflation, Causes and effects of inflation, measures to control inflation, inflationary gap, social costs of inflation

**Unit-4: Output and Employment (25 Marks)**

Say's Law of Market and classical theory of employment; Keynes's criticism of classical theory; aggregate demand and aggregate supply functions; the principle of effective demand, importance of effective demand; Keynesian theory of income, output and employment.

**Readings:**

1. Dornbusch, Fischer and Startz, Macroeconomics, McGraw Hill, 11th edition, 2010.
2. N. Gregory Mankiw. Macroeconomics, Worth Publishers, 7th edition, 2010.
3. Olivier Blanchard, Macroeconomics, Pearson Education, Inc., 5th edition, 2009.
4. Richard T. Froyen, Macroeconomics, Pearson Education Asia, 2nd edition, 2005.
5. Andrew B. Abel and Ben S. Bernanke, Macroeconomics, Pearson Education, Inc., 7th edition, 2011.
6. Errol D'Souza, Macroeconomics, Pearson Education, 2009.
7. Paul R. Krugman, Maurice Obstfeld and Marc Melitz, International Economics, Pearson Education Asia, 9th edition, 2012.
8. Jhingan, M.,L Macroeconomic Theory, vrinda Publications, 12<sup>th</sup> edition, 2010



**Economics**  
**Core Course 4**  
**MATHEMATICAL METHODS IN ECONOMICS – II**  
**Paper- ECC 2.2**

**Unit I: Differential Calculus**

**(25 marks)**

Rules of differentiation; Application of derivatives: Marginal revenue, average revenue, total revenue, marginal cost, average cost and total cost; Maxima and minima.

**Unit II: Integral Calculus**

**(25 marks)**

Rules of integration; integration by substitution, integration by parts and integration by partial fractions; Theorems of integration: Euler's theorem and Adding-up theorem; producer and consumer surplus

**Unit III: Differential and Difference Equations**

**(25 marks)**

Types of differential equation: direct integration, separable, exact, homogeneous, linear differential equations of first and second order; solution of differential equation. Difference equation and solution of difference equation: first order and second order.

**Unit IV: Single-variable Optimization**

**(25 marks)**

Optimization techniques: Unconstrained maxima and minima: Meaning, relative and absolute extreme. Economic applications of unconstrained maxima and minima with single explanatory variable: cost minimization, profit maximization, revenue maximization, maximization of tax revenue, production behaviour.

**Readings**

1. Baruah, S. (2008), *Basic Mathematics and its Application in Economics*, Macmillan India Ltd., New Delhi.
2. Chiang, A. C. (2000), *Fundamental Methods of Mathematical Economics*, MsGraw-Hill, New Delhi.
3. Monga, G. S. (2009), *Mathematics and Statistics for Economics*, Vikas Publishing House Pvt. Ltd..
4. Sydsaeter, K. And P. Hammod (2002), *Mathematics for Economic Analysis*, Pearson Educational Asia, Delhi.
5. Yamane, T. (2011) 2<sup>nd</sup> edition, *Mathematics for Economists: An Elementary Survey*, PHI Learning Private Limited, New Delhi.

**Economics**  
**Core Course 5**  
**INTERMEDIATE MICROECONOMICS – I**  
**Paper- ECC 3.1**

**Course Description**

The course is designed to provide a sound training in microeconomic theory to formally analyze the behavior of individual agents. Since students are already familiar with the quantitative techniques in the previous semesters, mathematical tools are used to facilitate understanding of the basic concepts. This course looks at the behaviour of the consumer and the producer and also covers the behavior of a competitive firm.

**Course Outline**

**Unit-1: Consumer Theory (25 Marks)**

Preference; utility; budget constraint; choice; demand; Slutsky equation; choice under risk and intertemporal choice; revealed preference.

**Unit-2: Production and Costs (25 Marks)**

Technology; isoquants; production with one and more variable inputs; returns to scale; short run and long run costs; cost curves in the short run and long run; review of perfect competition.

**Unit-3: Perfect Competition and Monopoly (25 Marks)**

Equilibrium of the firm, Perfect Competition- short and long run equilibrium of the firm and industry. Monopoly- short and long run equilibrium. Measure of Monopoly power, Monopoly control and regulation,

**Unit-4: Theories of Wages and Rent (25 Marks)**

Wages and Collective bargaining. Modern theories of wages. Rent- Concepts, Scarcity Rent, Differential Rent, Ricardian and Modern theory of Rent. Quasi Rent.

**Readings:**

1. Hal R. Varian, Intermediate Microeconomics, a Modern Approach, W.W. Norton and Company/Affiliated East-West Press (India), 8th edition, 2010. The workbook by Varian and Bergstrom may be used for problems.
2. C. Snyder and W. Nicholson, Fundamentals of Microeconomics, Cengage Learning (India), 2010.
3. B. Douglas Bernheim and Michael D. Whinston, Microeconomics, Tata McGrawHill (India), 2009.
4. Ahuja, H.I. (1990) Advance economic Theory, S. Chand & Co, New Delhi.

**Economics**  
**Core Course 6:**  
**INTERMEDIATE MACROECONOMICS – I**  
**Paper- ECC 3.2**

**Course Description**

This course introduces the students to formal modeling of a macro-economy in terms of analytical tools. It discusses various alternative theories of output and employment determination in a closed economy in the short run as well as medium run, and the role of policy in this context. It also introduces the students to various theoretical issues related to an open economy.

**Course Outline**

**Unit-1: Consumption Function (25 Marks)**

Meaning of consumption function; Keynes psychological law of consumption; determinants of consumption function; Relative income hypothesis; The permanent income hypothesis; The Life cycle hypothesis

**Unit-2: Inflation, Unemployment and Expectations (25 Marks)**

Phillips curve: The relation between inflation and unemployment; Long run Phillips curve- Friedman's view, Tobin's view and Solow's view; rational expectation and long run Phillips curve; Policy implications of the Philips curve; Stabilization policy and Ratex hypothesis

**Unit-3: Business cycle (25 Marks)**

Meaning, types and characteristics of business cycle; phases of business cycle; Theories of Business cycle- Hawtrey's monetary theory, Keynes view on trade cycle, Schumpeter's Innovation theory; Concept of accelerator; Samuelson and Hicks multiplier and accelerator interaction Model, control of trade cycle

**Unit -4: Investment Theory (25 Marks)**

Types of investment-Autonomous and induced investment, Marginal efficiency of capital, general equilibrium IS and LM curves, Investment multiplier and its effectiveness in LDCs.

**Readings:**

1. Dornbusch, Fischer and Startz, Macroeconomics, McGraw Hill, 11th edition, 2010.
2. N. Gregory Mankiw. Macroeconomics, Worth Publishers, 7th edition, 2010.
3. Olivier Blanchard, Macroeconomics, Pearson Education, Inc., 5th edition, 2009.
4. Steven M. Sheffrin, Rational Expectations, Cambridge University Press, 2nd edition, 1996.
5. Andrew B. Abel and Ben S. Bernanke, Macroeconomics, Pearson Education, Inc., 7th edition, 2011.
6. Errol D'Souza, Macroeconomics, Pearson Education, 2009
7. Paul R. Krugman, Maurice Obstfeld and Marc Melitz, International Economics, Pearson Education Asia, 9th edition, 2012.

**Economics**  
**Core Course 7**  
**STATISTICAL METHODS FOR ECONOMICS**  
**Paper- ECC 3.3**

**UNIT I: Introduction to Statistics** **(25 Marks)**

Basic concepts, frequency distribution, cumulative frequency, graphic and diagrammatic representation of data, techniques of data collection, sampling vs. population, primary and secondary data.

**UNIT II: Central Tendency and Dispersion** **(25 Marks)**

Measures of central tendency- Mean, Median, Range, Mean deviation, Standard deviation, coefficient of variation, Skewness and Kurtosis

**UNIT III: Correlation and Regression** **(25 Marks)**

Coefficient of correlation- Karl Pearson and Rank correlation. Regression- linear regression, two regression lines, methods of least squares

**UNIT IV: Elementary Probability Theory and Sampling** **(25 Marks)**

Concept, calculation of probability, theorems of probability (Addition and Multiplication), conditional probability and Bayes' theorem, mathematical expectation. Principal sets in a sample survey, methods of sampling: non-probability and probability sampling methods, properties of random sampling.

**Readings:**

1. Gupta, S. P. (2005), *Statistical Methods*, Sultan Chand and Sons.
2. Monga, G. S. (2009), *Mathematics and Statistics for Economics*, Vikas Publishing House Pvt. Ltd..
3. Devore, J. L. (2010), *Probability and Statistics for Engineers*, Cengage Learning.

**Economics**  
**Core Course 8**  
**INTERMEDIATE MICROECONOMICS – II**  
**Paper- ECC 4.1**

**Course Description**

This course is a sequel to Intermediate Microeconomics I. The emphasis will be on giving conceptual clarity to the student coupled with the use of mathematical tools and reasoning. It covers general equilibrium and welfare, imperfect markets and topics under information economics.

**Course Outline**

**Unit-1: General Equilibrium, Efficiency and Welfare (25 Marks)**

Equilibrium and efficiency under pure exchange and production; overall efficiency and welfare economics.

**Unit-2: Imperfect Competitive Market (25 Marks)**

Monopolistic competition; oligopoly-classical model, kinked demand curve: non-collusive and collusive oligopoly; cartel and price leadership; pricing with market power; price discrimination;

**Unit-3: Game Theory and Strategic Behaviour (25 Marks)**

Cooperative and non-cooperative games, Dominant Strategy, Choice of an optimal strategy in the absence of a Dominant strategy, Neumann-Morgenstern Game theory, The Prisoners Dilemma and oligopoly Theory

**Unit-4: Market Failure and Welfare Economics (25 Marks)**

Externalities; public goods and markets: welfare economics-pareto optimality, Kaldor, Hicks welfare criterion, Scitovsky paradox.

**Readings:**

1. Hal R. Varian, *Intermediate Microeconomics, a Modern Approach*, 8th edition, W.W. Norton and Company/Affiliated East-West Press (India), 2010. The workbook by Varian and Bergstrom could be used for problems.
2. C. Snyder and W. Nicholson, *Fundamentals of Microeconomics*, Cengage Learning (India), 2010.
3. Ahuja, H.L. (2012) *Advanced Economic Theory* 8<sup>th</sup> edition, S. Chand & Company Ltd. New Delhi

**Economics**  
**Core Course 9**  
**INTERMEDIATE MACROECONOMICS – II**  
**Paper- ECC 4.2**

**Course Description**

This course is a sequel to Intermediate Macroeconomics I. In this course, the students are introduced to the long run dynamic issues like growth and technical progress. It also provides the micro-foundations to the various aggregative concepts used in the previous course.

**Course Outline**

**Unit-1: Balance of payment**

**(25 Marks)**

Meaning and components of Balance of payments; Balance of payments equilibrium; Causes of Disequilibrium in the balance of payments; measures to control deficit in balance of payments; Balance of payments and balance of trade; Adjustment mechanisms of balance of payments

**Unit-2: Foreign Exchange**

**(25 Marks)**

Meaning of foreign exchange rate; Determination of equilibrium exchange rate; theories of foreign exchange-the Mint parity theory, The purchasing power parity theory, The Balance of payments theory. Causes of changes in the exchange rate

**Unit-3: Fiscal and Monetary Policy**

**(25 Marks)**

Active or passive; monetary policy objectives and targets; the government budget constraint; government debt and Ricardian equivalence.

**Unit-4: Schools of Macroeconomic Thoughts**

**(25 Marks)**

Classicals; Keynesians; New-Classicals and New-Keynesians.

**Readings:**

1. Dornbusch, Fischer and Startz, Macroeconomics, McGraw Hill, 11<sup>th</sup> edition, 2010.
2. N. Gregory Mankiw. Macroeconomics, Worth Publishers, 7<sup>th</sup> edition, 2010.
3. Olivier Blanchard, Macroeconomics, Pearson Education, Inc., 5<sup>th</sup> edition, 2009.
4. Charles I. Jones, Introduction to Economic Growth, W.W. Norton & Company, 2<sup>nd</sup> edition, 2002.
5. Andrew B. Abel and Ben S. Bernanke, Macroeconomics, Pearson Education, Inc., 7<sup>th</sup> edition, 2011.
6. Errol. D'Souza, Macroeconomics, Pearson Education, 2009. 7. Robert J. Gordon, Macroeconomics, Prentice-Hall India Limited, 2011.

**Economics**  
**Core Course 10**  
**INTRODUCTORY ECONOMETRICS**  
**Paper- ECC 4.3**

**UNIT I: Basic Econometrics**

**(25 Marks)**

Nature, objectives, scope and limitations of econometrics; Methodology of econometrics; Forecasting and prediction; Stochastic and non-stochastic variables, dummy and proxy variables; Nature and sources of data: time series, cross-section, pooled and panel data; Accuracy of data.

**UNIT II: Statistical Concepts**

**(25 Marks)**

Normal distribution; Chi-square test and F-distributions: estimation of parameters; properties of estimators; testing of hypotheses: defining statistical hypotheses; distribution of test statistics; testing hypotheses related to population parameters; Type I and Type II errors.

**UNIT III: Simple Linear Regression Model: Two Variable Case**

**(25 Marks)**

Meaning, Simple and general linear regression model- assumption; Estimation of model by method of ordinary least squares (OLS); Goodness of fit; Test of hypotheses; Scaling and units of measurement; Gauss-Markov theorem; Forecasting.

**UNIT IV: Multiple Regression Model and Problems in Regression Analysis**

**(25 Marks)**

Estimation (through OLS approach) and properties of estimators: Concepts and derivation of  $R^2$  and Adjusted  $R^2$ ; Partial regression coefficients; Testing hypothesis-individual and joint; functional forms of regression models; qualitative (dummy) independent variables. Nature, test, consequences and remedial steps of problems of heteroscedasticity, Multicollinearity and autocorrelation.

**Readings:**

1. Gujarati, D. N. (2007), *Basic Econometrics*, Tata McGraw-Hill, New Delhi.
2. Christopher Dougherty (2007), *Introduction to Econometrics*, Oxford University Press, 3<sup>rd</sup> Edition, Indian Edition.
3. Kmenta, J. (2008), *Elements of Econometrics*, Indian Reprint, Khosla Publishing House, 2<sup>nd</sup> Edition.

**Economics**  
**Core Course 11**  
**INDIAN ECONOMY-I**  
**Paper- ECC 5.1**

**Course Description**

Using appropriate analytical frameworks, this course reviews major trends in economic indicators and policy debates in India in the post -Independence period, with particular emphasis on paradigm shifts and turning points. Given the rapid changes taking place in India, the reading list will have to be updated annually.

**Course Outline**

**Unit-1: Economic Development since Independence (25 Marks)**

Major features of the economy at independence; major issues of development; characteristics of the Indian economy as a developing economy; occupational distribution,.

**Unit-2: Population and Human Development (25 Marks)**

Demographic trends and issues; population policy; human development in India-education; health and malnutrition.

**Unit-3: Growth and Distribution (25 Marks)**

Trends and policies in poverty; inequality and unemployment.

**Unit-4: Planning in India (25 Marks)**

Objectives, achievements and failures, NITI Aayog-objectives, allocation and targets. Economic reforms

**Readings:**

1. Jean Dreze and Amartya Sen, Jean Dreze and Amartya Sen, 2013. *An Uncertain Glory: India and its Contradictions*, Princeton University Press.
2. V.k .puri and s.k misra, *Indian economy*, Himalaya publishing house, 2008
3. Ruddar Datt, *Indian economy*, s.chand & company (pvt) Ltd, 1989
4. Pulapre Balakrishnan, 2007, *The Recovery of India: Economic Growth in the Nehru Era*, *Economic and Political Weekly*, November.
5. Rakesh Mohan, 2008, —Growth Record of Indian Economy: 1950-2008. A Story of Sustained Savings and Investment, *Economic and Political Weekly*, May.
6. S.L. Shetty, 2007, —India's Savings Performance since the Advent of Planning, in K.L. Krishna and A. Vaidyanathan, editors, *Institutions and Markets in India's Development*.
7. Himanshu, 2010, *Towards New Poverty Lines for India*, *Economic and Political Weekly*, January.
8. Jean Dreze and Angus Deaton, 2009, *Food and Nutrition in India: Facts and Intepretations*, *Economic and Political Weekly*, February.
9. Himanshu. 2011, —Employment Trends in India: A Re-examination, *Economic and Political Weekly*, September.
10. Rama Baru et al, 2010, —Inequities in Access to Health Services in India: Caste, Class and Region, *Economic and Political Weekly*, September.
11. Geeta G. Kingdon, 2007, —The Progress of School Education in India, *Oxford Review of Economic Policy*.



**Economics**  
**Core Course-12**  
**Developmental Economics-I**  
**Paper- ECC 5.2**

Course Description

This is the first part of a two-part course on economic development. The course begins with a discussion of alternative conceptions of development and their justification. It then proceeds to aggregate models of growth and cross-national comparisons of the growth experience that can help evaluate these models. The axiomatic basis for inequality measurement is used to develop measures of inequality and connections between growth and inequality are explored. The course ends by linking political institutions to growth and inequality by discussing the role of the state in economic development and the informational and incentive problems that affect state governance. Course Outline.

**Course Outline**

**Unit-1: Conceptions of Development (25 Marks)**

Alternative measures of development, documenting the international variation in these measures, comparing development trajectories across nations and within them.

**Unit:2. Growth Models and Empirics (25 Marks)**

The Harrod-Domar model, the Solow model and its variants, endogenous growth models and evidence on the determinants of growth.

**Unit-3: Poverty and Inequality: Definitions, Measures and Mechanisms (25 Marks)**

Inequality axioms; a comparison of commonly used inequality measures; connections between inequality and development; poverty measurement; characteristics of the poor; mechanisms that generate poverty traps and path dependence of growth processes.

**Unit-4: Political Institutions and the Functioning of the State (25 Marks)**

The determinants of democracy; alternative institutional trajectories and their relationship with economic performance; within-country differences in the functioning of state institutions; state ownership and regulation; government failures and corruption.

**Readings**

1. Debraj Ray, Development Economics, Oxford University Press, 2009.
2. Partha Dasgupta, Economics, A Very Short Introduction, Oxford University Press, 2007.
3. Abhijit Banerjee, Roland Benabou and Dilip Mookerjee, Understanding Poverty, Oxford University Press, 2006.
4. Kaushik Basu, The Oxford Companion to Economics in India, OUP, 2007.
5. Amartya Sen, Development as Freedom, OUP, 2000.
6. Daron Acemoglu and James Robinson, Economic Origins of Dictatorship and Democracy, Cambridge University Press, 2006.
7. Robert Putnam, Making Democracy Work: Civic Traditions in Modern Italy, Princeton University Press, 1994

**Economics**  
**Core Course 13:**  
**INDIAN ECONOMY-II**  
**Paper- ECC 6.1**

**Course Description**

This course examines sector-specific policies and their impact in shaping trends in key economic indicators in India. It highlights major policy debates and evaluates the Indian empirical evidence. Given the rapid changes taking place in the country, the reading list will have to be updated annually.

**Course Outline**

**Unit-1: Policies and Performance in Agriculture**

**(25 Marks)**

Growth; productivity; agrarian structure and technology; capital formation; trade; pricing and procurement.

**Unit-2: Policies and Performance in Industry**

**(25 Marks)**

Growth; productivity; diversification; small scale industries; public sector; competition policy; foreign investment. Industrial policies

**Unit-3: Trends and Performance in Services**

**(25 Marks)**

Role of foreign trade, trends in exports and imports, composition and direction of India's foreign trade.

**Unit-4: Economy of Nagaland**

**(25 Marks)**

Natural resources, population, infrastructure and structural changes in Nagaland Economy

**Readings:**

1. Shankar Acharya, 2010, —Macroeconomic Performance and Policies 2000-8, in Shankar Acharya and Rakesh Mohan, editors, *India's Economy: Performances and Challenges: Development and Participation*, Oxford University Press.
2. Riddar Datt, Indian economy, s.chand & company (pvt) Ltd, 1989.
3. Rakesh Mohan, 2010, —India's Financial Sector and Monetary Policy Reforms, in Shankar Acharya and Rakesh Mohan, editors, *India's Economy: Performances and Challenges: Development and Participation*, Oxford University Press.
4. B.N. Goldar and S.C. Aggarwal, 2005, —Trade Liberalisation and Price-Cost Margin in Indian Industries, *The Developing Economics*, September.
5. P. Goldberg, A. Khandelwal, N. Pavcnik and P. Topalova, 2009, —Trade Liberalisation and New Imported Inputs, *American Economic Review, Papers and Proceedings*, May.
6. Kunal Sen, 2010, —Trade, Foreign Direct Investment and Industrial Transformation in India, in Premachandra Athukorala, editor, *The Rise of Asia*, Routledge.
7. A. Ahsan, C. Pages and T. Roy, 2008, —Legislation, Enforcement and Adjudication in Indian Labour Markets: Origins, Consequences and the Way Forward, in D. Mazumdar and S. Sarkar, editors, *Globalization, Labour Markets and Inequality in India*, Routledge.
8. NUTA, Economic development in Nagaland: prospectus and constraints
9. Y.Vero, Economy of Nagaland.
10. V.k .puri and s.k misra, *Indian economy*, Himalaya publishing house, 2008
11. Pulapre Balakrishnan, Ramesh Golait and Pankaj Kumar, 2008, —Agricultural Growth in India Since 1991, *RBI DEAP Study no. 27*.

**Economics**  
**Core Course-14**  
**Development Economics-II**  
**Paper- ECC 6.2**

**Course Description**

This is the second module of the economic development sequence. It begins with basic demographic concepts and their evolution during the process of development. The structure of markets and contracts is linked to the particular problems of enforcement experienced in poor countries. The governance of communities and organizations is studied and this is then linked to questions of sustainable growth. The course ends with reflections on the role of globalization and increased international dependence on the process of development.

**Course Outline**

**Unit-1: Demography and Development (25 Marks)**

Demographic concepts; birth and death rates, age structure, fertility and mortality; demographic transitions during the process of development; gender bias in preferences and outcomes and evidence on unequal treatment within households; connections between income, mortality, fertility choices and human capital accumulation; migration.

**Unit-2: Land, Labor and Credit Markets (25 Marks)**

The distribution of land ownership; land reform and its effects on productivity; contractual relationships between tenants and landlords; land acquisition; nutrition and labor productivity; informational problems and credit contracts; microfinance; interlinkages between rural factor markets.

**3. Environment and Sustainable Development (25 Marks)**

Defining sustainability for renewable resources; a brief history of environmental change; common-pool resources; environmental externalities and state regulation of the environment; economic activity and climate change.

**4. Globalization (25 Marks)**

Globalization in historical perspective; the economics and politics of multilateral agreements; trade, production patterns and world inequality; financial instability in a globalized world.

**Readings**

1. Debraj Ray, Development Economics, Oxford University Press, 2009.
2. Partha Dasgupta, Economics, A Very Short Introduction, Oxford University Press, 2007.
3. Abhijit Banerjee, Roland Benabou and Dilip Mookerjee, Understanding Poverty, Oxford University Press, 2006.
4. Thomas Schelling, Micromotives and Macrobehavior, W. W. Norton, 1978.
5. Albert O. Hirschman, Exit, Voice and Loyalty: Responses to Decline in Firms, Organizations and States, Harvard University Press, 1970.
6. Raghuram Rajan, Fault Lines: How Hidden Fractures Still Threaten the World Economy, 2010.
7. Elinor Ostrom, Governing the Commons: The Evolution of Institutions for Collective Action, Cambridge University Press, 1990.
8. Dani Rodrik, The Globalization Paradox: Why Global Markets, States and Democracy Can't Coexist, Oxford University Press, 2011.
9. Michael D. Bordo, Alan M. Taylor and Jeffrey G. Williamson (ed.), Globalization in Historical Perspective, University of Chicago Press, 2003.

**Economics**  
**DSE-I (vi)**  
**MONEY AND FINANCIAL MARKETS**  
**Paper- ECD 5.3**

**Course Description**

This course exposes students to the theory and functioning of the monetary and financial sectors of the economy. It highlights the organization, structure and role of financial markets and institutions. It also discusses interest rates, monetary management and instruments of monetary control. Financial and banking sector reforms and monetary policy with special reference to India are also covered.

**Course Outline**

**Unit-1: Money (25 Marks)**

Concept, functions, measurement; theories of money supply determination.

**Unit-2: Financial Institutions, Markets, Instruments and Financial Innovations (25 Marks)**

- a. Role of financial markets and institutions; .
- b. Money and capital markets: organization, structure and reforms in India;

**Unit-3: Banking System (25 Marks)**

- a. banking legislation in India: banking regulation Act, 1949
- b. Indian banking system: Changing role and structure; banking sector reforms.

**Unit-4: Central Banking and Monetary Policy (25 Marks)**

Functions; goals, targets, indicators and instruments of monetary control; monetary management in an open economy; current monetary policy of India.

**Readings**

1. F. S. Mishkin and S. G. Eakins, Financial Markets and Institutions, Pearson Education, 6th edition, 2009.
2. M.L.Jinghan, monetary economics, vrinda publications (p) Ltd, 6th edition ,2010
3. S.B,Gupta, monetary economics, s.chand &company.pvt.Ltd, 2012
4. D.raj, monetary economics, rajat publications, 2004
5. F. J. Fabozzi, F. Modigliani, F. J. Jones, M. G. Ferri, Foundations of Financial Markets and Institutions, Pearson Education, 3rd edition, 2009.
6. M. R. Baye and D. W. Jansen, Money, Banking and Financial Markets, AITBS, 1996.
7. Rakesh Mohan, Growth with Financial Stability- Central Banking in an Emerging Market, Oxford University Press, 2011.

**Economics**  
**DSE-II (vii)**  
**PUBLIC ECONOMICS**  
**Paper- ECD 5.4**

**Course Description**

Public economics is the study of government policy from the points of view of economic efficiency and equity. The paper deals with the nature of government intervention and its implications for allocation, distribution and stabilization. Inherently, this study involves a formal analysis of government taxation and expenditures. The subject encompasses a host of topics including public goods, market failures and externalities. The paper is divided into two sections, one dealing with the theory of public economics and the other with the Indian public finances.

**Course Outline**

**Unit-1: Public Economic Theory (25 Marks)**

Fiscal policy: meaning and scope, objectives and roles. Public Goods: definition, models of efficient allocation, pure and impure public goods.

**Unit-2: Public expenditure (25 Marks)**

Public expenditure in India: introduction, classification of public expenditure-expenditure on revenue account, expenditure on capital account. Role of public expenditure in UDC's.

**Unit-3: Indian Public Finances (25 Marks)**

- a. Tax System: structure and reforms
- b. Canons of taxation

**Unit-4: Budget (25 Marks)**

- c. Budget, deficits and public debt
- d. Fiscal federalism in India

**Readings:**

1. J. Hindriks, G. Myles: *Intermediate Public Economics*, MIT Press, 2006.
2. R.K.Lekhi, *public finance*, : kalyani publishers, 18<sup>th</sup> edition , 2011
3. H.L. Bhatia, *public finance*, vikash publishing house pvtLTD, 27<sup>th</sup> edition 2012
4. H. Rosen, T. Gayer: *Public Finance*, 9<sup>th</sup> ed., McGraw-Hill/Irwin, 2009.
5. Joseph E. Stiglitz, *Economics of the Public Sector*, W.W. Norton & Company, 3<sup>rd</sup> edition, 2000.
6. R.A. Musgrave and P.B. Musgrave, *Public Finance in Theory & Practice*, McGraw Hill Publications, 5<sup>th</sup> edition, 1989.
7. John Cullis and Philip Jones, *Public Finance and Public Choice*, Oxford University Press, 1<sup>st</sup> edition, 1998.
8. Harvey Rosen, *Public Finance*, McGraw Hill Publications, 7<sup>th</sup> edition, 2005.
9. Mahesh Purohit, *Value Added Tax: Experiences of India and Other Countries*, 2007.
10. Kaushik Basu and A. Maertens (ed.), *The New Oxford Companion to Economics in India*, Oxford University Press, 2013.
11. M.M. Sury, *Government Budgeting in India*, 1990.

**Economics**  
**DSE-3 (xii)**  
**ENVIRONMENTAL ECONOMICS**  
**Paper- ECD 6.3**

**Course Description**

This course focuses on economic causes of environmental problems. In particular, economic principles are applied to environmental questions and their management through various economic institutions, economic incentives and other instruments and policies. Economic implications of environmental policy are also addressed as well as valuation of environmental quality, quantification of environmental damages, tools for evaluation of environmental projects such as cost-benefit analysis and environmental impact assessments. Selected topics on international environmental problems are also discussed.

**Course Outline**

**Unit-1: Introduction and the Theory of Externalities (25 Marks)**

What is environmental economics; review of microeconomics and welfare economics. Pareto optimality and market failure in the presence of externalities; property rights and the Coase theorem.

**Unit-2: The Design and Implementation of Environmental Policy (25 Marks)**

Overview; Pigouvian taxes and effluent fees; tradable permits; choice between taxes and quotas under uncertainty; implementation of environmental policy.

**Unit-3: International Environmental Problems (25 Marks)**

Trans-boundary environmental problems; economics of climate change; trade and environment.

**Unit-4: Measuring the Benefits of Environmental Improvements and Sustainable Development (25 Marks)**

Non-Market values and measurement methods; risk assessment and perception. Concepts; measurement.

**Readings**

1. Charles Kolstad, Intermediate Environmental Economics, Oxford University Press, 2nd edition, 2010.
2. Robert N. Stavins (ed.), Economics of the Environment: Selected Readings, W.W. Norton, 5th edition, 2005.
3. Roger Perman, Yue Ma, James McGilvray and Michael Common, Natural Resource and Environmental Economics, Pearson Education/Addison Wesley, 3rd edition, 2003.
4. Maureen L. Cropper and Wallace E. Oates, 1992, —Environmental Economics: A Survey, Journal of Economic Literature, Volume 30:675-740

**Economics**  
**International Economics**  
**Paper- ECD 6.4**

**Course Description**

This course develops a systematic exposition of models that try to explain the composition, direction, and consequences of international trade, and the determinants and effects of trade policy. It then builds on the models of open economy macroeconomics developed in courses 08 and 12, focusing on national policies as well as international monetary systems. It concludes with an analytical account of the causes and consequences of the rapid expansion of international financial flows in recent years. Although the course is based on abstract theoretical models, students will also be exposed to real-world examples and case studies.

**Course Outline**

- 1. Introduction (25 Marks)**  
What is international economics about? An overview of world trade.
- 2. Theories of International Trade (25 Marks)**  
The Ricardian, specific factors, and Heckscher-Ohlin models; new trade theories; the international location of production; firms in the global economy — outsourcing and multinational enterprises.
- 3. Trade Policy (25 Marks)**  
Instruments of trade policy; political economy of trade policy; controversies in trade policy.
- 4. International Macroeconomic Policy (25 Marks)**  
Fixed versus flexible exchange rates; international monetary systems; financial globalization and financial crises.

**Readings:**

1. Paul Krugman, Maurice Obstfeld, and Marc Melitz, *International Economics: Theory and Policy*, Addison-Wesley (Pearson Education Indian Edition), 9th edition, 2012.
2. Dominick Salvatore, *International Economics: Trade and Finance*, John Wiley International Student Edition, 10th edition, 2011.

**Economics**  
**Generic Elective -1**  
**INTRODUCTORY MICROECONOMICS**  
**Paper- ECG 1.4**

**Course Description**

This course is designed to expose the students to the basic principles of microeconomic theory. The emphasis will be on thinking like an economist and the course will illustrate how microeconomic concepts can be applied to analyze real-life situations.

**Course Outline**

**Unit-1: Exploring the subject matter of Economics and Price Mechanism (25 Marks)**

Why study economics? Definitions, Scope and method of economics; the economic problem: scarcity and choice; the question of what to produce, how to produce and how to distribute output. Science of Economics; Economic system of India; prices: determination, equilibrium between demand and supply –changes in market equilibrium. Price mechanism.

**Unit-2: Supply and Demand: How Markets Work (25 Marks)**

Markets and competition; determinants of individual demand/supply; demand/supply schedule and demand/supply curve; market versus individual demand/supply; shifts in the demand/supply curve, demand and supply together; elasticity and its application; consumer surplus; producer surplus and the efficiency of the markets.

**Unit-3: The Households (25 Marks)**

The consumption decision - budget constraint, consumption and income/price changes, demand for all other goods and price changes; description of preferences (representing preferences with indifference curves); properties of indifference curves; consumer's optimum choice; income and substitution effects, theory of consumer behaviour.

**Unit-4: Input Markets (25 Marks)**

Labour and land markets - basic concepts (derived demand, productivity of an input, marginal productivity of labour, marginal revenue product); demand for labour; input demand curves; shifts in input demand curves; competitive labour markets; and labour markets and public policy.

**Readings**

1. Karl E. Case and Ray C. Fair, *Principles of Economics*, Pearson Education Inc., 8<sup>th</sup> Edition, 2007.
2. N. Gregory Mankiw, *Economics: Principles and Applications*, India edition by South Western, a part of Cengage Learning, Cengage Learning India Private Limited, 4<sup>th</sup> edition, 2007.
3. Joseph E. Stiglitz and Carl E. Walsh, *Economics*, W.W. Norton & Company, Inc., New York, International Student Edition, 4<sup>th</sup> Edition, 2007.



**Economics**  
**Generic Elective -1I**  
**Introductory Macroeconomics**  
**Paper- ECG 2.4**

**Course Description**

This course aims to introduce the students to the basic concepts of Macroeconomics. Macroeconomics deals with the aggregate economy. This course discusses the preliminary concepts associated with the determination and measurement of aggregate macroeconomic variable like savings, investment, GDP, money, inflation and the balance of payments.

**Course Outline**

**Unit-1: Introduction to Macroeconomics and National Income Accounting (25 Marks)**

Nature and Scope Macroeconomics; Concepts and Measurement of National Income. Difficulties in the measurement of national income; Factors determining national income. Importance of national income. Circular Flow of income-Two sector economy, Three Sector closed economy, four sector open economy

**Unit-2: Money (25 Marks)**

Money-Definitions of Money, money and near money, inside and outside money, Functions of money; quantity theory of money- cash transaction and cash balance approach; Keynes's Reformulated quantity theory of money; determinants of money supply; High powered money and money multiplier; Measures of money supply in India .

**Unit-3: Inflation (25 Marks)**

Concept of Inflation, Deflation & Reflation and disinflation; types of inflation, Causes and effects of inflation, measures to control inflation, inflationary gap, social costs of inflation

**Unit-4: Output and Employment (25 Marks)**

Say's Law of Market and classical theory of employment; Keynes's criticism of classical theory; aggregate demand and aggregate supply functions; the principle of effective demand, importance of effective demand; Keynesian theory of income, output and employment.

**Readings:**

1. Dornbusch, Fischer and Startz, Macroeconomics, McGraw Hill, 11th edition, 2010.
2. N. Gregory Mankiw. Macroeconomics, Worth Publishers, 7th edition, 2010.
3. Olivier Blanchard, Macroeconomics, Pearson Education, Inc., 5th edition, 2009.
4. Richard T. Froyen, Macroeconomics, Pearson Education Asia, 2nd edition, 2005.
5. Andrew B. Abel and Ben S. Bernanke, Macroeconomics, Pearson Education, Inc., 7th edition, 2011.
6. Errol D'Souza, Macroeconomics, Pearson Education, 2009.
7. Paul R. Krugman, Maurice Obstfeld and Marc Melitz, International Economics, Pearson Education Asia, 9th edition, 2012.
8. Jhingian, M.,L Macroeconomic Theory, vrinda Publications, 12<sup>th</sup> edition, 2010

**Economics**  
**Generic Elective -III(a)**  
**INDIAN ECONOMY-I**  
**Paper- ECG 3.5**

**Course Description**

Using appropriate analytical frameworks, this course reviews major trends in economic indicators and policy debates in India in the post -Independence period, with particular emphasis on paradigm shifts and turning points. Given the rapid changes taking place in India, the reading list will have to be updated annually.

**Course Outline**

**Unit-1: Economic Development since Independence (25 Marks)**

Major features of the economy at independence; major issues of development; characteristics of the Indian economy as a developing economy; occupational distribution,.

**Unit-2: Population and Human Development (25 Marks)**

Demographic trends and issues; population policy; human development in India-education; health and malnutrition.

**Unit-3: Growth and Distribution (25 Marks)**

Trends and policies in poverty; inequality and unemployment.

**Unit-4: Planning in India (25 Marks)**

Objectives, achievements and failures, NITI Aayog-objectives, allocation and targets. Economic reforms

**Readings:**

1. Jean Dreze and Amartya Sen, Jean Dreze and Amartya Sen, 2013. *An Uncertain Glory: India and its Contradictions*, Princeton University Press.
2. V.k .puri and s.k misra, *Indian economy*, Himalaya publishing house, 2008
3. Ruddar Datt, *Indian economy*, s.chand & company (pvt) Ltd, 1989
4. Pulapre Balakrishnan, 2007, *The Recovery of India: Economic Growth in the Nehru Era*, *Economic and Political Weekly*, November.
5. Rakesh Mohan, 2008, —Growth Record of Indian Economy: 1950-2008. A Story of Sustained Savings and Investment, *Economic and Political Weekly*, May.
6. S.L. Shetty, 2007, —India's Savings Performance since the Advent of Planning, in K.L. Krishna and A. Vaidyanathan, editors, *Institutions and Markets in India's Development*.
7. Himanshu, 2010, *Towards New Poverty Lines for India*, *Economic and Political Weekly*, January.
8. Jean Dreze and Angus Deaton, 2009, *Food and Nutrition in India: Facts and Interpretations*, *Economic and Political Weekly*, February.
9. Himanshu. 2011, —Employment Trends in India: A Re-examination, *Economic and Political Weekly*, September.
10. Rama Baru et al, 2010, —Inequities in Access to Health Services in India: Caste, Class and Region, *Economic and Political Weekly*, September.
11. Geeta G. Kingdon, 2007, —The Progress of School Education in India, *Oxford Review of Economic Policy*.

**Economics**  
**Generic Elective –IV**  
**INDIAN ECONOMY-II**  
**Paper- ECG 4.5**

**Course Description**

This course examines sector-specific policies and their impact in shaping trends in key economic indicators in India. It highlights major policy debates and evaluates the Indian empirical evidence. Given the rapid changes taking place in the country, the reading list will have to be updated annually.

**Course Outline**

**Unit-1: Policies and Performance in Agriculture (25 Marks)**

Growth; productivity; agrarian structure and technology; capital formation; trade; pricing and procurement.

**Unit-2: Policies and Performance in Industry (25 Marks)**

Growth; productivity; diversification; small scale industries; public sector; competition policy; foreign investment.

**Unit-3: Trends and Performance in Services (25 Marks)**

Role of foreign trade, trends in exports and imports, composition and direction of India's foreign trade.

**Unit-4: Economy of Nagaland: (25 Marks)**

Natural resources, population, infrastructure and structural changes in Indian economy

**Readings:**

1. Shankar Acharya, 2010, —Macroeconomic Performance and Policies 2000-8, in Shankar Acharya and Rakesh Mohan, editors, *India's Economy: Performances and Challenges: Development and Participation*, Oxford University Press.
2. V.k. puri and s.k misra, *Indian economy*, Himalaya publishing house, 2008
3. Ruddar Datt, *Indian economy*, s.chand & company (pvt) Ltd, 1989
4. Rakesh Mohan, 2010, —India's Financial Sector and Monetary Policy Reforms, in Shankar Acharya and Rakesh Mohan, editors, *India's Economy: Performances and Challenges: Development and Participation*, Oxford University Press.
5. Pulapre Balakrishnan, Ramesh Golait and Pankaj Kumar, 2008, —Agricultural Growth in India Since 1991, *RBIDEAP Study no. 27*.
6. B.N. Goldar and S.C. Aggarwal, 2005, —Trade Liberalisation and Price-Cost Margin in Indian Industries, *The Developing Economics*, September.
7. P. Goldberg, A. Khandelwal, N. Pavcnik and P. Topalova, 2009, —Trade Liberalisation and New Imported Inputs, *American Economic Review, Papers and Proceedings*, May.
8. Kunal Sen, 2010, —Trade, Foreign Direct Investment and Industrial Transformation in India, in Premachandra Athukorala, editor, *The Rise of Asia*, Routledge.
9. A. Ahsan, C. Pages and T. Roy, 2008, —Legislation, Enforcement and Adjudication in Indian Labour Markets: Origins, Consequences and the Way Forward, in D. Mazumdar and S. Sarkar, editors, *Globalization, Labour Markets and Inequality in India*, Routledge.

**Economics**  
**Skill Enhancement Course-I**  
**DATA ANALYSIS**  
**Paper- ECS 4.4**

**Course Description:**

This course introduces the student to collection and presentation of data. It also discusses how data can be summarized and analysed for drawing statistical inferences. The students will be introduced to important data sources that are available and will also be trained in the use of free statistical software to analyse data.

**Course Outline:**

**Unit-1** **(15 Marks)**

Sources of data: Population census versus sample surveys. Random sampling. Univariate frequency distributions. Measures of central tendency: mean, median and mode; arithmetic, geometric and harmonic mean. Measures of dispersion, skewness and kurtosis.

**Unit-2** **(10 Marks)**

Bivariate frequency distribution. Correlation and regression. Rank correlation.

**Unit-3** **(15 Marks)**

Introduction to probability theory. Notions of random experiment, sample space, event, probability of an event. Conditional probability. Independence of events. Random variables and probability distributions. Binomial and normal distributions.

**Unit-4** **(10 Marks)**

Basics of index numbers: price and quantity index numbers.

**Readings:**

1. P.H. Karmel and M. Polasek (1978), *Applied Statistics for Economists*, 4th edition, Pitman.
2. M.R. Spiegel (2003), *Theory and Problems of Probability and Statistics* (Schaum Series).

**Economics**  
**Skill Enhancement Course-II**  
**WORKING WITH ADVANCED EXCEL**  
**Paper - ECS 3.4**

**Course Description**

The Advance excel course helps the students to present the information in an easy to analyse format and extract meaning full information from business data by using Microsoft excel as a tool for solving business problems.

**Course content**

**Unit-1: Organizing and processing Data (15 Marks)**

Arranging data in tabular form, formatting data, performing basic calculations and financial calculations

**Unit-II: Summarizing Data (15 Marks)**

Creating graphs, Customizing Graphs, working with the cross tabulated data, and representing the cross tabulated data graphically.

**Unit-III: Analysing data for Decision Making (20 Marks)**

Charting Data fluctuations, Charting Data Trend, Performing What-if Analysis: Using Scenario Manager, Using Goal Seek, Using Solver.

**Readings**

1. Working with Advanced Excel 2013: student Guide. Published by NIIT

**SYLLABUS FOR UNDERGRADUATE COURSE (BA) EDUCATION HONOURS**

Semester	Core course (C)	Ability Enhancement Course (A)	Skilled Enhancement Course (S)	Discipline Specific Elective (D)	Generic Elective (G)
First	EDC 1.1 Basics in Education(6)	EGA 1.3 English Communication (2)			EDG 1.4 Basics in Education(6)
	EDC 1.2 Educational planning, administration and Management (6)				
Second	EDC 2.1 Education and Society(6)	ESA 2.3 Environmental Studies (2)			EDG 2.4 Education and Society(6)
	EDC 2.2 Pedagogical skills(6)				
Third	EDC 3.1 Technology and innovations in education(6)		EDS 3.4 Curriculum Development (2)		EDG 3.5 Technology and Innovations in Education (6)
	EDC 3.2 Statistics in Education(6)				
	EDC 3.3 Educational assessment and Evaluation(6)				
Fourth	EDC 4.1 The learner and learning process(6)		EDS 4.4 Early Childhood Care Education(2)		EDG 4.5 The Learner and Learning Process(6)
	EDC 4.2 Guidance and Counselling(6)				
	EDC 4.3 Comparative education(6)				
Fifth	EDC 5.1 History of Education in India (pre-independence) (6)			EDD 5.3 Indian Educational Thoughts and Practises(6)	
	EDC 5.2 Introduction to Educational Research(6)			EDD 5.4 Special Education-I(6)	
Sixth	EDC 6.1 History of Education in India (post-independence) (6)			EDD 6.3 Western Educational Thoughts and Practises(6)	
	EDC6.2 Contemporary concerns in Indian educations (6)			EDD 6.4 Special Education-II(6)	
Total credits	14(84)	2(4)	2(4)	4(24)	4(24)

## EDUCATION: CORE COURSE

Semester 1:

Course Title : **BASICS IN EDUCATION (EDC 1.1)**

Credit: 6

### Course Objectives

After completion of the paper, students shall be able to:

- Explain the concept of education and its relationship with philosophy
- List areas of philosophy and narrate their educational implications.
- Describe the contribution of Philosophy to the field of education.
- Appreciate the contribution of various Indian Schools of Philosophy to the field of education
- Evaluate the impact of Western Philosophies on Indian Education.
- Narrate the contribution of the Great Indian Thinkers.

### Course contents:

#### Unit – 1 : Bases of Education

1. Meaning, Nature and scope of Education
2. Aims of Education: Education for individual development and education for social efficiency
3. Functions of education

#### Unit – 2 : Philosophical foundations of education

1. Concept of Philosophy
2. Inter dependence of philosophy and education
3. Concept of philosophy: Metaphysics, Epistemology and Axiology.

#### Unit – 3: Western Schools of Philosophy and their educational implication.

1. Idealism
2. Naturalism
3. Pragmatism

#### Unit – 4: Doctrines of Great Educators of East and West and their influence on the practices of school education with special reference to Aims and ideals of Education, Curriculum, method of teaching and the role of teacher.

1. Mahatma Gandhi
2. Sri Aurobindo
3. Rousseau
4. John Dewey

### REFERENCES

- Agarwal, J.c. (2010), Teacher and Education in a Developing society, Delhi; Vikash Publishing house.
- Arulsarmy, S (2011), Philosophical and sociological perspectives on Education, New Delhi; Neelkamal Publications Pvt. Ltd.

- Bhatia K.K., (2011), Philosophical and sociological foundations of Education, New Delhi; Kalyani Publishers.
- Bigge, Morris, L. Educational Philosophies for Teachers. Columbus, USA: Charles Boston, USA: Allyn & Bacon.
- Brubacher, John. S. Modern Philosophies of Education. New York, USA: McGraw
- Butler J. Donald, Four Philosophies and their practices in Education and Religion.
- Chauhe, S.P. & Chaube, A (2009), Foundation of education , New Delhi; Vikash, Publishing house Pvt. Ltd.
- Dash, B.N. (2011) Foundation of Education, New Delhi; Kalyani Publishers.
- E. Merrill Publishing Co.
- Gutek, Gerald L. (2009). New Perspectives on Philosophy and Education. New
- Hill Book Company Inc.
- Janeja, V.R. (2012) Educational Thought and Practice, New Delhi, Sterling Publishers, Private Limited.
- Jersey, USA: Pearson
- Kneller, George F. Introduction to Philosophy of Education. New York, USA: John
- Mishra, Bhawna (2004), Education Evolution Development and Philosophy,
- Mohanty, Jagannatha (1991), Foundation of Education, Cuttack – 2, Takshashila.
- Nayak, B.K Text Book of Foundation of Education. Cuttack, Odisha: KitabMhal.
- New York, USA: Harper & Row.
- Ozman, Howard A., & Craver, Samuel M., Philosophical Foundations of Education.
- Premnath, Bases of Educations. Delhi, India: S. Chand and Co.
- Publishers.
- Ross, James S., Ground Work of Educational Theory. London, U.K: Oxford
- Rusk, Robert R., Philosophical Bases of Education, London, U.K: Oxford University of London Press Ltd.
- Safaya, R.N. & Shaida, B.D. (2010), Modern Theory and Principles of Education, New Delhi : Dhanpatra Publishing Company Pvt. Ltd.
- K.G. Education and social order. Bombay: Asia Publishing House.
- Taneja, V. R. (2000). Educational Thought and Practice. New Delhi: Sterling University of London Press Ltd

### Practical

Book Review : Each Student is required to review a Book / Journal / Educational Article and Write a report.  
Distribution of Marks.

Record - 20

Viva-voce - 10

Total = 30



## Semester 1 : Core 2

**Course Title: EDUCATIONAL PLANNING, ADMINISTRATION AND MANAGEMENT (EDC 1.2)**  
**Credit: 6**

### Course Objectives

On completion of the course the students shall be able to:

- explain the concept, nature and scope of educational management
- describe the functions of educational management and administration
- list down various types of educational administration
- elaborate the principles of educational management
- elaborate the steps in planning
- explain different types of administration
- elaborate functions of state level educational bodies
- describe the sources of financing in education

### Unit – 1 Educational Planning

1. Meaning, Nature, Objective and scope
2. Steps in Educational Planning: Diagnosis of Educational Development, Plan formulation, Plan implementation, Monitoring and Evaluation.

### Unit – 2 Educational Administration

1. Concept, Objectives and scope of educational administration
2. Basic Functions of Administration : Planning, Organizing, Directing and Controlling.
3. Functions of state level educational bodies: SCERT, BSE & School Education

### Unit – 3 Educational Management

1. Meaning, Nature and Scope
2. Types: Centralized and Decentralized, Authoritarian and Democratic
3. Functions of Educational Management

### Unit – 4 Economics of Education:

1. Cost in education: the current cost and capital cost of education
2. The direct and indirect cost of education
3. The private cost, social cost and unit cost of education
4. Educational expenditure as investment
5. Financing of education:
  - a) Agencies of financing education
  - b) Financing of education by parents
  - c) Financing of education by employers

## REFERENCES:

1. Bhatnagar, R.P. & Agarwal, V. Educational Administration, Meerut, Loyal Book Depot
2. Kochar, S.K.-(2002) Secondary School Administration, New Delhi Sterling Publishers Pvt. Ltd.
3. Mishra, P.K. (2008) Rudiments of Guidance and Management in Education, New Delhi, Kalyani Publishers
4. Naik, J.P.-Educational Planning in India.
5. Shukla, C.S. (2008) Essentials Educational Technology and Management, New Delhi, Dhanpat Rai Publishing Co.(P) Ltd
6. Shukla, S.P.-Educational Administration, Agra, Vinod Pustak Mandir
7. Bhatnagar, R.P. & Verma, L.B. (1978). Educational Administration. Meerut, India:
8. Blaug, M. (Ed.), Economics of Education, Vol. 1 & 2, Penguin
9. Deshmukh, A.V. and Naik A.P.(2010). Educational Management. Mumbai:
10. Fadia, B.L. (2010). PublicAdministration. New Delhi: PHI.
11. Himalaya Publishing House. India: Dhanpat Rai & Sons.
12. Kochar, S.K. (2011). School Administration and Management. New Delhi: Sterling
13. Koul, B.N. (Ed.), Economics of Education (Block 1, ES 317), IGNOU, New Delhi, 1993.
14. Rajaiah, B., Economics of Education, Mittal, New Delhi, 1987. . . .
15. Safaya, R & Saida, B.D. (1964). School Administration and Organisation. Jalandhar,
16. Schultz, T.W., The Economic Value of Education, Columbia University Press, New York, 1963.
17. Singh, B., Economics of Indian Education, Meenakshi Prakashan, New Delhi,, 1983.
18. UNESCO, Readings in the Economics of Education, 1968.
19. Vaizey, J., The Economics of Education, Feber & Feber, 1962.

## C -2 Practical:

A visit to any Higher-educational institute and prepare a report on Administration.

## Distribution of marks:

Record	-	20 marks
Viva voce	-	10 marks
Total	=	30 marks

## Semester II

### A. Core 3

**Course Title: EDUCATION AND SOCIETY (EDC 2.1)**

**Credit: 6.**

#### Course Objectives

After completion of this paper, students shall be able to:

- Justify education as a social process and explain its function.
- Describe the aims of education from sociological perspective.
- List various agencies of education and their function.
- justify education as a sub-system of society and how other sub-systems affect education
- Appreciate the importance of education for social change.

#### Unit – 1 Education and society

1. Society : Meaning and characteristics
2. Types of society : Agricultural, Industrial, rural and urban
3. Interrelationship between education and society
4. Social groups: Primary, Secondary - Social interaction and stratification

#### Unit – 2 Education and culture

1. Meaning and concept of culture
2. Characteristics and types of culture
3. Cultural lag and acculturation
4. Cultural dimensions of Education
5. Inter relationship between education, custom and value system.

#### Unit – 3 Education, Social process and Institution

1. Education and socialization
2. Education and social change
3. Education and social mobility

#### Unit – 4 Cultures of Northeast India

1. Cultural Factors of Northeast India with special reference to the Cultures and Traditions of Nagaland

#### REFERENCES

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3. Dewey, John (1973). The School and Society. Chicago: University of Chicago Press.
4. Mathur, S.S. (1966). A Sociological Approach to Indian Education.
5. Vinod Pustak Mandir, Agra. Nayak, B.K. Text Book of Foundation of Education. Cuttack: Kitab Mahal.
6. NCERT (1983). Teacher and Education in Emerging Indian Society New Delhi.
7. Ottaway, A.K.C. (1966). Education and Society. London: Routledge and Kegan Paul.

### C-3 Practical

Field trip :

Distribution of Marks.

Record	–	20
Viva-voce	–	10
Total	=	30

## Core 4

Course name : PEDAGOGICAL SKILLS (EDC 2.2)

Credit: 6

### Course objectives

- To initiate the concept of Pedagogy and familiarized with the educational process.
- To develop the ability to analyze classroom teaching-learning and the ability to observe classroom behavior.
- To develop a positive attitude towards life and the teaching profession.

### Course Contents:

#### Unit1: Conceptual Background on Pedagogy

1. Concept and meaning of pedagogy
2. Definition, nature and characteristics of teaching
3. Relationship between teaching and learning

#### Unit 2: General Principles of Teaching

1. General principles of teaching
2. Factors affecting teaching: input and output variables
3. Characteristics of a good teacher

#### Unit 3: Classroom Teaching

1. Observation of classroom behaviour
2. Flanders Interaction Analysis(FIA)
3. Concept and differences between traditional, macro and micro teaching

#### Unit 4: Teaching Methods and Skills

1. Teaching methods- lecture, demonstration, problem solving, programme instruction and storytelling
2. Teaching skills- use of blackboard, introducing a lesson, stimulus Variation, probing questions and reinforcement.

### Practical

Each student is required to develop a lesson plan based on the syllabus

Distribution of marks:

Preparation of lesson plan -	20
Viva-voce -	10
Total =	30

## Semester III

### Core 5

**Course name : TECHNOLOGY AND INNOVATIONS IN EDUCATION(EDC 3.1) Credit: 6**

#### Course objectives

- To understand the meaning, nature and scope of educational technology
- Create an understanding of the application of basics of technology in the process of education
- To familiarize with the technological advances made and to develop a positive attitude towards the use of ICT in the educational process

#### Course Contents

##### UNIT -1 Educational Technology

1. Meaning, Nature and Scope
2. Types- Hardware and Software
3. Mass media approach in educational technology

##### UNIT-2 Communication, Personalized System of Instruction

1. Meaning, Process& components of communication process
2. Types of classroom communication
3. Information communication Technology (ICT) in distance education
4. Computerized Assisted Instruction

##### UNIT-3 System Approach & Instructional System

1. Systems Approach to instructional process
2. Instructional system designing- concept, component, physical& human resources

##### UNIT-4 Innovation in educational Technology

1. Programmed learning
2. Team teaching
3. Simulated Teaching

#### Suggested Reading:

1. R. A Sharma. Advanced Educational Technology
2. J. Mohanty. Educational Technology
3. S.K Mangal. Educational Technology

#### **Practical : Classroom Interaction Analysis :**

Research on use of ICT in different education institutions.

Distribution of marks:

Preparation of lesson plan	-	20
Viva-voce	-	10
Total	=	30

**Course Objectives**

After completion of this course students shall be able to:

- Describe the importance of statistics in field of education
- Convey the essential characteristics of a set of data by representing in tabular and graphical forms.
- Compute relevant measures of average and measures of variation
- Spell out the characteristics of normal probability of distribution
- Examine relationship between and among different types of variables of a research study

**Unit – 1: Concept of Statistics**

1. Meaning, Definition and characteristics of statistics
2. Types of Data
3. Scales of Measurement
4. Frequency Distribution

**Unit – 2: Graphical Representations of Data**

1. Histogram
2. Frequency Polygon
3. Pie-Diagram
4. Cumulative frequency graph
5. Cumulative percentage curve / Ogive

**Unit – 3: Measures of Central Tendency and Dispersion:**

1. Mean
2. Median
3. Mode
4. Range
5. Average Deviation
6. Quartile Deviation
7. Standard Deviation

**Unit – 4: Measures of Correlation**

1. Concept of Correlation
2. Rank difference method of correlation
3. Product moment correlation method
4. Normal probability curve: Divergence from normality.

## REFERENCES

1. Ferguson, G.A.(1971). Statistical Analysis in Psychology and Education. Kogakusha,
2. Garrett, H.E. (1971). Statistics in Psychology and Education. New Delhi: Paragon
3. Guilford, J.P. & Fruchter, B. (1981). Fundamental Statistics in Psychology and
4. Hall of India Private Limited
5. Mangal, S.K. (2008). Statistics in Education and Psychology. New Delhi: Prentice-
6. Nanda G.C. & Khato, P.K. (2005), Fundamentals of Educational Research and Statistics, Cuttack: Kalyani Publisher.
7. Rathore. J.M. & Mishra D.C. (2011), Foundations of Statistics in Education, Bhubaneswar: gyanajuga Publication. Sharma, R.A. (2000), Advanced Statistics in Education and Psychology, Meerut: Surya Publisher.
8. Swain, S.K. & Pradha, China & Khato, P.K. (2005): Educational Measurement Statistics and Guidance, New Delhi: Kalyani Publisher.

### C-6 Practical: Statistical Analysis of Achievement Scores

Each student is required to collect the achievement scores of the students of any two class (secondary / higher secondary) of any institutions and prepare an analysis report.

#### Distribution of Marks

Preparation of Records	-	20 Marks
Viva voce	-	10 Marks
Total	=	30 Marks



## Core 7

**Course Title : EDUCATIONAL ASSESSMENT AND EVALUATION (EDC 3.3) Credit 6**

### Course Objectives

After completion of the course, students shall be able to:

- Describe the role of assessment in education.
- Differentiate measurement, assessment and evaluation.
- Establish the relationship among measurement, assessment and evaluation.
- Explain different forms of assessment that aid student learning.
- Use wide range of assessment tools and techniques and construct these appropriately.
- Classify educational objectives in terms of specific behavioral form
- Prepare a good achievement test on any school subject
- Explain the characteristics of good measuring instruments.
- List out different type of assessment techniques

### Unit – 1: Assessment & Evaluation in Education

1. Understanding the meaning of Test, Measurement Evaluation and Assessment□
2. Scales of Measurement
3. Types of measurement, Norm Referenced and Criterion Referenced□
4. Procedure of Evaluation: Placement, Formative, Diagnostic and Summative□
5. Concept of continuous and comprehensive evaluation (CCE).□

### Unit – 2 Techniques of Assessment

1. Observation
2. Interview
3. Rating scale
4. Checklist
5. Project
6. Concept Mapping

(Above techniques are to be discussed with reference to purpose, type, procedure of administration and application)

### Unit – 3: Test constructions

1. Teacher made test vs. standardization
2. General Principles of Test construction and standardization : Planning, Preparing, Tryingout & Evaluating.

### Unit – 4: Characteristics of a Good Test

1. Reliability - Concept and method
2. Validity - Concept, type and methods of validation
3. Objectivity - Concept, type and factors

## REFERENCES

1. Aggrawal, J.C. (1997). Essentials of Examination System, Evaluation, Tests and Measurement. New Delhi: Vikas Publishing House Pvt Ltd.
2. Banks, S.R. (2005). Classroom Assessment: Issues and Practices. Boston: Allyn & Bacon.
3. Blooms, B.S.(1956). Taxonomy of Educational Objectives. New York: Longman Green and Company
4. Cooper, D. (2007). Talk About Assessment, Strategy and Tools to Improve Learning. Toronto: Thomson Nelson
5. Earl, L.M. (2006). Assessment as Learning: Using Classroom Assessment to Maximize Student Learning. Thousand Oaks, California: Corwin Press
6. Gronlund, N.E. (2003). Assessment of student Achievement. Boston: Allyn & Bacon.
7. Kaplan, R.M. & Saccuzzo. D.P. (2000). Psychological Testing, Principles, Applications & Issues. California: Wordsworth.
8. Linn, R.L. & Gronlund, N.E. (2000). Measurement and Assessment in Teaching. London: Merrill Prentice Hall.
9. Ebel, R.L. and Frisbie, D.A. (1991) Essentials of Educational Measurement, New Delhi: prentice Hall of India Ltd.
10. Lindquist, E.F. (1951) Essential Measurement Washington : American Council on Education.
11. Stanley J.C. and Hopkins K.D (1990) Educational and Psychological
12. measurement and Evaluation (7 th Edition), New Jersey : prentice Hall of India Ltd.
13. Thorndike, R.L. Hagen, E (1955) Measurement of Evaluation of Psychology and Evaluation. New York : John Willey and sons.

### C-7 Practical

Construction of an achievement test

Each student will prepare a checklist or a rating scale useful for research purposes.

### Distribution of Marks

Record - 20 marks

Viva voce - 10 marks

Total = 30 marks

## Semester IV

Core – 8

Course Title: THE LEARNER AND LEARNING PROCESS (EDC 4.1)

Credit: 6

### Course objectives:

- To enable the students to understand the meaning and scope of educational psychology
- To enable them to understand the dimensions of growth and development
- To enable them to understand different aspects of personality and means of developing an integrated personality.

### Course contents:

#### Unit 1: Introduction

1. Psychology- Concept of psychology, relationship between psychology and education
2. Application of educational psychology in teaching-learning process
3. Stages of growth and development of adolescence

#### Unit 2: Learning and Motivation

1. Learning and motivation- Types of learning (Gagne)
2. Factors of learning
3. Maslow's theory of motivation
4. Role of motivation in learning

#### Unit 3: Personality

1. Personality- Determinant of personality development
2. Theories of personality (Jung and Sigmund Freud)

#### Unit 4: Intelligence

1. Intelligence \_ meaning and characteristic
2. Spearman's Two Factor Theory
3. Factors of intelligence – Heredity and environment
4. Emotional Intelligence – meaning, characteristic and importance

### Suggested Reading:

1. Chauhan S S \_ Advanced Educational Psychology
2. Aggarwal J C \_ Essentials of Educational Psychology
3. Mangal S K \_ Advanced Educational Psychology
4. Woolfolk A E \_ Educational Psychology 2011

#### C-8 Practical

Each student is to administer a psychological test (intelligence / creativity/ personality test) and interpret the scores and prepare a report.

#### Distribution of Marks

Record	-	20 marks
Viva voce	-	10 marks
Total	=	30 marks

## Core 9

**Course Title: GUIDANCE AND COUNSELING (EDC 4.2)**

**Credit: 6**

### Course objectives:

- To help in understanding the meaning and importance of guidance and counseling
- To develop the ability to interpret various records for assessing the students strengths and weaknesses
- To develop the ability to identify gifted children who need enrichment and exceptional children who need special care in a positive way through.

### Course contents:

#### Unit 1: Introduction

1. Concepts of guidance- meaning, nature and principle of guidance
2. Educational guidance- purpose and principles
3. Educational guidance with reference to pupils' abilities, aptitude, interest, and Attitude

#### Unit 2: Vocational guidance

1. Vocational guidance- meaning, purpose and function
2. Vocational guidance at the secondary stage

#### Unit 3: Counseling

1. Concept of counseling- meaning, nature and techniques of counseling
2. Characteristics of a good counselor
3. Transactional analysis (TA)

#### Unit 4: Career counseling

1. Career counseling- meaning and importance of career counseling with college students
2. Occupational information services,
3. Career conference and simulated interview.

### Suggested readings-

1. Educational, vocational guidance and counseling. Principles, techniques and programmes- Rashmi Agrawal, Shipra publication, New Delhi- 110092
2. Principles of guidance and counseling- Sitaram Jaiswal
3. Guidance and counseling- a manual, B.G Barki Murkhopadha
4. Educational, vocational guidance and counseling- J.C Aggarwal
5. Guidance and counseling service- Downing L.M

### C-9 Practical

Each student is required to prepare for simulated interview.

### Distribution of Marks

Record	-	20 marks
Viva voce	-	10 marks
Total	=	30 marks

## Core 10

**Course Title: COMPARATIVE EDUCATION(EDC 4.3)**

**Credit: 6**

### Course objectives

1. On completion of this course, students shall be able to:
2. Explain the scope of comparative education
3. List out the factors of comparative education
4. Compare the structure, curriculum and evaluation system of India with that of China, Japan, U.K and U.S.A

### Unit – 1 Definition and scope of Comparative Education

1. First pioneers of comparative education.
2. Other subsequent comparative studies
3. Approaches : statistical, psychological and historical

### Unit – 2 Theory and Methods of comparative Education

1. Purpose of comparative education
2. Area studies : Description and interpretation

### Unit – 3 Systems of Education

(Characteristic, structure, curriculum and evaluation system)

1. U.K.
2. U.S.A.

### Unit – 4 Systems of Education

(Characteristic, Structure, Curriculum & Evaluation system)

1. China
2. Japan

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1. Attkoch, R. G., Arrive, R. & Kelly, G. P. (Ed.), Comparative Education, Macmillan, New York, 1982.
2. Bereday, George Z.F (1964) Comparative Method in Education Holt Rinehart and Winston, Inc, New York.
3. Biswas, A. & Aggarwal, J.C., Comparative Education, Arya Book Depot, New Delhi, 1972.
4. Chaube, S.P., Comparative Education, Ram Prashad & Sons, Agra, 1969:
5. Gezi, K. I., Education in Comparative and International Perspective,
6. Holt, Rinehart & Winston, New York, 1971.
7. Hans, N., Comparative Education, Universal Book Stall, New Delhi, 1988.
8. Joshi N., Education Elsewhere-and Here, Bharatiya Vidya Bhawan, Bomaby, 1979.
9. Mukherjee, L, Comparative Education, Allied Publishers, New Delhi, 1975.
10. Sodhi, T.S., Comparative Education, Vikas Publishing House Pvt. Ltd., New Delhi, 1993.

### Core-10 Practical

#### Term Paper

Each student is required to prepare a term paper on any topic of comparative education.

#### Distribution of marks:

Record	-	20 marks
Viva voce	-	10 marks
Total	=	30 marks.

## Semester V

### Core 11

**Course Title: HISTORY OF EDUCATION IN INDIA (PRE INDEPENDENCE) (EDC 5.1) Credit: 6**

#### Course Objectives:-

- To help students understand the development of education in India from Historical perspectives.
- To understand the salient features of education in ancient, medieval and British India.
- To have an adequate knowledge of the recommendations of various Commissions and committees of Indian education during British India.

#### Course contents:-

##### Unit 1: Ancient India

1. Vedic Education - aims, curriculum and organization of education.
2. Buddhist Education – aims, curriculum and organization. The four eternal truths.

##### Unit 2: Medieval India

1. Islamic Education- its salient features, objectives and curriculum.
2. State patronage of educational Endeavour.
3. Other educational institutions of medieval India.

##### Unit 3: Education in British India (Phase 1)

- a. Educational activities of missionaries towards Indian education.
- b. Significance of Charter Act of 1813
- c. Macaulay's Minute (1835)
- d. Wood's Despatch (1854)
- e. Hunter's Commission (1882)

##### Unit 4: Education in British India (Phase 2)

- a. Calcutta University Commission (1917)
- b. Hartog Committee (1929)
- c. Sargent Report (1944)

#### Suggested Readings;

1. Chaube S P \_ History and Development of Modern Indian Education
2. Aggarwal J C \_ Landmark in History of Modern Indian Education
3. Rawat P L. \_ History of Education in India
4. Lal and Sinha \_ Development and Problems of Indian Education

#### Core-11 Practical

##### Term Paper

Each student will make a report on development of education in Nagaland, according to their own tribe.

#### Distribution of marks:

Record - 20 marks

Viva voce - 10 marks

Total = 30 marks.

## Core 12

**Course Title: INTRODUCTION TO EDUCATIONAL RESEARCH (EDC 5.2)**

**Credit: 6**

### Course Objectives

On completion of this course the students shall be able to:

- Describe the nature, purpose, scope of research in education
- Identify types of research in education
- Explain the characteristic of qualitative, quantitative and mixed research
- Select and explain an appropriate method for a research study
- Select appropriate tools and techniques for the collection of data
- Describe the procedure of preparation of Research Report

### Unit – 1 Introduction to Research

1. Meaning and characteristics of research
2. Basic, Applied and action research
3. The nature of educational research

### Unit – 2 Types of studies in Educational Research

1. Descriptive Research
2. Experimental Research
3. Qualitative Research

### Unit – 3 Research Design

1. Identification of problem and formulation of Research question
2. Hypothesis : Meaning and types
3. Sampling : Concept and purpose
4. Tools of data collection : Questionnaire, Rating scale, Attitude scale and checklist
5. Techniques of data collection : Interview and observation

### Unit – 4 Data Analysis, Interpretation and Research report

1. Analysis of Quantitative Data (Descriptive statistical Measure)
2. Analysis of Qualitative Data
3. Writing proposal / synopsis
4. Method of literature survey / Review

### REFERENCES

- Ary, D., Jacobs, L. (2002). Introduction to Research in Education.
- Best J.W. (1986). Research in Education. New Delhi: Prentice Hall of India.
- Borg, W.R. & Gall, M.D.( 1989). Educational Research: An Introduction. New York: Longman.
- Creswell, J.W. (2007). Qualitative Inquiry and Research Design
- Koul,L (1988)Methodology of Educational research,Vikash Publishing House NewDelhi

### Practical

Preparation of Project proposal: Each student will prepare a project proposal.

### Distribution of Marks

Record	-	20 marks
Viva voce	-	10 marks
Total	=	30 marks

## Semester VI

### Core 13

**Course Title: HISTORY OF EDUCATION IN INDIA (POST INDEPENDENCE) (EDC 6.1)**  
**CREDIT: 6**

#### Course objectives:

- To acquaint with the knowledge of the recommendations of various commissions and national policies
- To help students understand problems and issues of education in modern India

#### Course contents-

##### Unit 1: Development of Indian Education Post Independence Period

1. Aims and objectives and its impact;
2. University Education Commission (1948-1949)
3. Secondary Education Commission (1952-1953)
4. Kothari Education Commission (1964-1966)

##### Unit 2: Educational Provisions

1. National Policy in Education (NPE) 1986-
2. National system of education
3. Education for equality
4. Reorganization of education

##### Unit 3: Educational Commissions

1. National Knowledge Commission (NKC) 2005-  
Its focus areas-
  - a. Recommendations on higher education
  - b. Recommendations on vocational education
2. National Curricular framework (2005)

##### Unit 4: Right to Education 2009

1. Constitutional provision in relation to education- RTE 2009
2. Problems of Education in Nagaland with special reference to RTE

#### Suggested Readings:

1. Chaube S P \_ History and Development of Modern Indian Education
2. Aggarwal J C \_ Landmark in History of Modern Indian Education
3. Rawat P L. \_ History of Education in India
4. Lal and Sinha \_ Development and Problems of Indian Education

#### Practical

Each student is required to visit school and find out different problems and issues and prepare a report.

#### Distribution of Marks:

Report	-	20
Viva Voice	-	10
Total	=	30



## Core 14

**Course Title: CONTEMPORARY CONCERNS IN INDIAN EDUCATION (EDC 6.2) Credit: 6**

### Course Objectives

- On completion of the course the students shall be able to:
- explain the concept of universalization of elementary education
- describe universalization of elementary education and secondary education implementation strategies
- describe present position of secondary education
- Explain the challenges of secondary education
- explain present scenario of higher education and agencies for improvement
- explain the concept of value education, environmental education and Life skills education

### Unit – 1 Elementary Education

1. Universalisation of elementary education.
2. Right of Children to Free and Compulsory Education (RCFCE) Act 2009.
3. Quality concerns in Elementary education.
4. Sarva Sikshya Abhiyan (SSA) & District Primary Education Project (DPEP)

### Unit – 2 Secondary and Higher Educations

1. Challenges and problems of secondary education.
2. Rashtriya Madhyamik Sikshya Abhiyan (RMSA)
3. Challenges in higher education: expansion, quality & inclusiveness.
4. RUSA

### Unit – 3 Social Commitments in Education

1. Gender issues in Indian education
2. Equalization of educational opportunity
3. Constitutional provisions for education

### Unit – 4 Emerging concerns

1. Value education, Peace Education and Human Rights Education
2. Adolescent Education
3. Life skills education

### REFERENCE

1. Aggarwal, J.C (2010). The Progress of Education In Free India. New Delhi: Arya and Rejuvenation of Higher Education'. New Delhi: Author.
2. Bhatnagar, T.N (1995) Teacher Education in India. New Delhi: NCERT. Book Depot.
3. Dash,M & Nanda, G.C (1998). Trends and Issues in Indian Education. Cuttack: Kochhar, S.K (1989) Pivotal Issues in Indian Education. New Delhi: Sterling
4. MHRD, Govt. of India (2008). Report of 'The Committee to Advise on Renovation
5. Mohanty Jagannath (2008) : Modern Trends in Indian Education, New Delhi, Deep & Deep Publications Pvt. Ltd.

6. Mohanty, S.B (1996) Education in Changing Indian Society. Cuttack: Vidyapuri
7. Nanda, S.K (1991) Indian Education and its Problems Today. New Delhi: Kalyani Publishers Publishers Private Limited.
8. Qureshi, M.U (2000) Problems of Indian Education, New Delhi: Anmol Publications
9. Safeya, R.N (1998) Development, planning and problems of Indian education, Delhi: Dhanpat Rai and Sons.
10. Saxena, N.R, Misha, B.K & Mohanty, R.K (2005) Teacher Education. Meerut: Surya Publication
11. Tilak, Jandhyala B.G. (2006). Education: A Saga of Spectacular Achievements and Conspicuous Failures in India: Social Development Report. New Delhi. Oxford University Press.
12. Tilak. Jandhyala B.G. (2003) Education, Society and Development. New Delhi: APH publishing Corporation for NUEPA.
13. UGC (2012). Higher education in India at a glance. New Delhi: Author.
14. Walia, J.S (2004). Modern Indian Education and Its Problems. Punjab: Paul Publications

#### C-14 Practical

Survey on life skills of the students

Distribution of Marks

Record - 20 marks

Viva voce - 10 marks

Total = 30 marks

#### **Generic Elective Course**

1. EDG 1.4 : Basic In Education
2. EDG 2.4 : Education & Society
3. EDG 3.5: Technology & Innovation in Education
4. EDG 4.5: The Learner & Learning Process.

The Content of the Generic Elective Course in the same as the core Course

## DISCIPLINE SPECIFIC ELECTIVE COURSE (DSEC)

Semester V

**Course Title: INDIAN EDUCATIONAL THOUGHTS AND PRACTICES (EDD 5.3) Credit: 6**

### Objectives:

- To narrate the concept of education in the context of Indian heritage.
- To examine the contributions of Indian philosophers towards education.
- To make a comparative analysis of eastern thought with modern education.

### Course Contents:

#### Unit 1: Vedic Philosophy

1. Vedic Philosophy – Manu
2. Indian Schools of Philosophy (Sankhya, Vedanta with special reference to the concept of knowledge, reality and values and their Educational implications)

#### Unit 2: Rabindranath Tagore

Rabindranath Tagore - Shantiniketan

#### Unit 3: Mahatma Gandhi

Mahatma Gandhi- His philosophy and contribution (Basic Education)

#### Unit 4: Acharya Vinobha Bhave

Acharya Vinobha Bhave – Educational philosophy, aims of education ( sarvodaya samaj)

### Suggested Reading:-

1. Great Educational Thinkers; Western and Indian By B C Rai Dhanpat Rai and Sons Publications
2. V. R. Taneja. 2005. Educational thoughts and practices
3. A Biswas and JC Agarwal. Seven Indian Educationists

### Practical

Each student is required to write a report on their understanding of any Indian philosopher's contribution to present system of education

### Distribution of Marks

Record - 20 marks

Viva voce - 10 marks

Total = 30 marks

**Course Objectives:**

- To enable the students to identify the children with special needs.
- To enable the students to understand the problems and needs of gifted and creative children.
- To enable the students to understand various educational and guidance programmes for the gifted and creative children.

**Course contents:**

**Unit 1: Introduction**

1. Special education- meaning, need and classification

**Unit 2: Giftedness**

1. Concept of giftedness- identification of gifted children, Education for gifted children

**Unit 3: Guidance**

1. Guidance for gifted children
2. Role of parents, teachers and counselors

**Unit 4: Creativity**

1. Creativity- concept and characteristics of creativity
2. Factors fostering creativity
3. Comparative study of gifted and creative children; their problems.

**Suggested Reading:**

1. Mahesh Bhargava – Introduction to Exceptional Children: Their nature and educational provision.
2. Chintamani Kar \_ Exceptional Children: Their psychology and education
3. Chauhan SS \_ Education of Exceptional Children
4. Gupta P K \_ Education for Creativity

**Practical**

Each student is required to visit a special school and give a report of their observation

**Distribution of Marks**

Record	-	20 marks
Viva voce	-	10 marks
Total	=	30 marks

## SEMESTER VI

**Course Title: WESTERN EDUCATIONAL THOUGHTS AND PRACTICES (EDD 6.3) Credit: 6**

### **Objectives:**

- To narrate the concept of education in the context of western thoughts.
- To examine the contributions of Western philosophers towards education.
- To make a comparative analysis of Western thought with modern education.

### **Course Contents:**

#### **Unit 1: Ancient Period**

1. Ancient Period – Greek and Roman system of education

#### **Unit 2: Renaissance Period**

1. Education in Europe during the Renaissance Period

#### **Unit 3: Communist Period**

1. Communist Philosophy – Contribution of Karl Marx

#### **Unit 4: Existentialism and Realism**

1. Existentialism – Soren Kierkegard
2. Realism – Gustave Courbet

### **Suggested readings:**

1. S.P . Chaube . Some Great Western educators

### **Practical**

Each student is required to write a report on their understanding of any western philosophers' contribution to present system of education

### **Distribution of Marks**

Record - 20 marks

Viva voce - 10 marks

Total = 30 marks

**Course objectives:**

- To enable the students to understand the characteristics of physically and mentally challenged children
- To identify the symptoms and problems of delinquents and deprived children.
- Learning how the different educational provisions can help such children.

**Course contents:**

**Unit 1: Differently abled**

1. Differently abled - physical and mental Characteristics of physical, visual, oral and speech impaired children

**Unit 2: Mental Retardation**

1. Mentally retarded children- meaning and general classification
2. Classification on the basis of I.Q
3. Causes of mental retardation

**Unit 3: Education of Deprived Children**

1. Education of deprived children- meaning and characteristics
2. Educational provisions for the deprived children
3. Educational provisions for the physically differently abled children

**Unit 4: Juvenile Delinquency**

1. Juvenile Delinquency: Meaning, Symptoms of Delinquency, Causes and Remedial Measures

**Suggested Reading:**

1. Mahesh Bhargava – Introduction to Exceptional Children: Their nature and educational provision.
2. Chintamani Kar \_ Exceptional Children: Their psychology and education
3. Chauhan SS \_ Education of Exceptional Children
4. Gupta P K \_ Education for Creativity
5. Farwel M \_ Special Education Needs
6. Porter L \_ Educating Young Children with Special Needs

**Practical**

Each student is required to conduct a case study of a special child and write a report

**Distribution of Marks**

Record - 20 marks

Viva voce - 10 marks

Total = 30 marks

## **SKILL ENHANCEMENT COURSE (SEC)**

### **Semester III**

**Course Title: CURRICULUM DEVELOPMENT (EDS 3.4)**

**Credit: 2**

#### **Objectives:**

- Define and explain the concept of curriculum
- Suggest bases of curriculum such as philosophical, psychological and sociological
- Identify major issues and trends in curriculum

#### **Course Contents:**

##### **Unit 1 : Introduction**

1. Concept of Curriculum
2. Meaning, nature and scope of curriculum
3. Factors influencing curriculum development

##### **Unit 2: Types of curriculum**

1. Types of curriculum: Child-centered curriculum ( activity), subject-centered curriculum (traditional), experience centered curriculum
2. Bases of curriculum: Philosophical, psychological and sociological.

##### **Unit 3: Curriculum Construction**

1. Curriculum Construction: Principles and procedures for curriculum construction.
2. Importance of curricular and co-curricular activities.
3. Core Curriculum

#### **Suggested Readings:**

1. Sharma, R.A.- Curriculum Development and Instruction. R.Lall Book Depot
2. Beane, Conrad, EP Jr and Samuel J.A.Jr. – Curriculum Planning and Development. Allyn and Bacon, Boston. 1986
3. Brady, L.- Curriculum Development. Prentice Hall. 1995
4. Orstein, A.C. and Hunkins, E. – Curriculum Foundations, Principles and Issues. Allyn and Bacon. Boston. 1998
5. Curriculum Development – Theory and practice. Harcourt Brance. New York. 1962

## SKILL ENHANCEMENT COURSE (SEC)

### Semester IV

**Course Title:** EARLY CHILDHOOD CARE AND EDUCATION (EDS 4.4) **Credit: 2**

#### Objectives-

- To understand the importance of Early Childhood Care and Education
- To study the contributions of educationists and philosophers
- Study the provisions and policies for Early Childhood

#### Course Contents:

##### Unit 1: Infancy Stage

1. Different aspects of development at the infancy stage
2. Physical/Motor
3. Mental/Cognitive
4. Social/Emotional
5. Language

##### Unit 2: Pre-School Education

Contributions of Philosophers and Educationists to Pre-School Education.

- a. Froebel
- b. Montessori

##### Unit 3: Agencies and schemes

1. Agencies of ECCE in India
2. Government programmes and schemes
3. Home
4. Day-care/Creches

#### Suggested Readings:

1. Aggarwal, J.C. – Methods and Materials of Nursery Education. Doaba House, 1990.
2. ECCE (1, 11 and 111)Nasin Siddiqui, Suman Bhatia and Suptika Biswas. Doaba House, 1688, NAI SARA, Delhi- 110006
3. Wort, C.Sue – Early Childhood Curriculum. Guwahati, Nividita Book Distributors, 2002.
4. Riley, J. – Learning in the Early Years, A guide for teachers. New Delhi, Saga Publications, 2003
5. Day Barbara – Early Childhood education: Organising Learning Activities. New York, Mc Millan, 1983.
6. Child Development and Personality – Harper International Edition. Harper and Row Publishers, New York
7. Child DevelopmentElizabeth B. Hurlock and Tata McGraw – Hill Publishing Company Ltd, New Delhi
8. Grewal, J.S. – Early Childhood Education- Foundation and Practice. National Psychological Corporation. Agra- U.P. India



**Syllabi of BA English Honours under CBCS  
St. Joseph's College (Autonomous), Jakhama**

Semester	Core Course (C)	Ability Enhancement Course (A)	Skilled Enhancement Course	Discipline specific Elective (D)	Generic Elective (G)
First	EGC 1.1 Indian Classical Literature	EGA 1.3 English Communication			EGG 1.4 Academic Writing and Composition
	EGC 1.2 European Classical Literature				
Second	EGC 2.1 Indian Writing in English	ESA 2.3 Environmental Studies			EGG 2.4 Media and Communication Skills
	EGC 2.2 British Poetry and Drama: 14th to 17th Centuries				
Third	EGC 3.1 American Literature		EGS 3.4 Creative Writing		EGG 3.5 Contemporary India: Women and Empowerment
	EGC 3.2 Popular Literature				
	EGC 3.3 British Poetry and Drama: 17th and 18th Centuries				
Fourth	EGC 4.1 British Literature: 18th Century		EGS 4.4 Soft Skills		EGG 4.5 Language, Literature and Culture
	EGC 4.2 British Romantic Literature				
	EGC 4.3 British Literature: 19th Century				
Fifth	EGC 5.1			EGD 5.3 Literary	

## **Syllabus of BA English Honours under CBCS St. Joseph's College (Autonomous), Jakhama**

### **Core Course: Paper Titles**

1. Indian Classical Literature
2. European Classical Literature
3. Indian Writing in English
4. British Poetry and Drama: 14th to 17th Centuries
5. American Literature
6. Popular Literature
7. British Poetry and Drama: 17th and 18th Centuries
8. British Literature: 18th Century
9. British Romantic Literature
10. British Literature: 19th Century
11. Women's Writing
12. British Literature: The Early 20th Century
13. Naga writing in English : Poetry & Fiction
14. Post colonial Literatures

### **Discipline Centric Elective: Paper Titles**

1. Literary Criticism
2. Literature of the Indian Diaspora
3. Science fiction and Detective Literature
4. Literary Theory

### **Generic Elective: Paper Titles**

1. Academic Writing and Composition
2. Media and Communication Skills
3. Contemporary India: Women and Empowerment
4. Language, Literature and Culture

### **Ability Enhancement Course (Compulsory): Paper Titles**

1. English/MIL Communication
2. Environmental Studies

### **Skilled Enhancement Elective Course: Paper Titles**

1. Creative Writing
2. Soft Skills

## B. A. English Honours under CBCS

### 1. Core Course

#### Detailed Syllabi

#### I Semester

##### Paper 1: Indian Classical Literature (EGC 1.1)

Credits: 6

- Unit I** : Kalidasa *Abhijnana Shakuntalam*, tr. Chandra Rajan, in *Kalidasa: The Loom of Time* (New Delhi: Penguin, 1989).
- Unit II** : Vyasa 'The Dicing' and 'The Sequel to Dicing', 'The Book of the Assembly Hall',
- Unit III** : 'The Temptation of Karna', Book V 'The Book of Effort', in *The Mahabharata*: tr. and ed. J.A.B. van Buitenen (Chicago: Brill, 1975) pp. 106–69.
- Unit IV** : Sudraka *Mrcchakatika*, tr. M.M. Ramachandra Kale (New Delhi: Motilal Banarasidass, 1962).
- Unit V** : Ilango Adigal 'The Book of Banci', in *Cilappatikaram: The Tale of an Anklet*, tr. R. Parthasarathy (Delhi: Penguin, 2004) book 3.

#### Suggested Topics and Background Prose Readings for Class Presentations

##### Topics

- The Indian Epic Tradition: Themes and Recensions
- Classical Indian Drama: Theory and Practice
- Alankara and Rasa
- Dharma and the Heroic

##### Readings

1. Bharata, *Natyashastra*, tr. Manomohan Ghosh, vol. I, 2nd edn (Calcutta: Granthalaya, 1967) chap. 6: 'Sentiments', pp. 100–18.
2. Iravati Karve, 'Draupadi', in *Yuganta: The End of an Epoch* (Hyderabad: Disha, 1991) pp. 79–105.
3. J.A.B. Van Buitenen, 'Dharma and Moksa', in Roy W. Perrett, ed., *Indian Philosophy, vol. V, Theory of Value: A Collection of Readings* (New York: Garland, 2000) pp. 33–40.
4. Vinay Dharwadkar, 'Orientalism and the Study of Indian Literature', in *Orientalism and the Postcolonial Predicament: Perspectives on South Asia*, ed. Carol A. Breckenridge and Peter van der Veer (New Delhi: OUP, 1994) pp. 158–95.

##### Paper 2: European Classical Literature (EGC 1.2)

Credits: 6

- Unit I** : Introduction to Epic and Drama
- Unit II** : Homer *The Iliad*, tr. E. V. Rieu (Harmondsworth: Penguin, 1985).
- Unit III** : Sophocles *Oedipus the King*, tr. Robert Fagles in *Sophocles: The Three Theban Plays* (Harmondsworth: Penguin, 1984).
- Unit IV** : Plautus *Pot of Gold*, tr. E.F. Watling (Harmondsworth: Penguin, 1965).
- Unit V**: Ovid *Selections from Metamorphoses* 'Bacchus', (Book III), 'Pyramus and Thisbe' (Book IV), 'Philomela' (Book VI), tr. Mary M. Innes (Harmondsworth: Penguin, 1975).

## Suggested Topics and Background Prose Readings for Class Presentations

### Topics

The Epic  
Comedy and Tragedy in Classical Drama  
The Athenian City State  
Catharsis and Mimesis

### Readings

1. Prasad, B: A Background to the study of English Literature, New Delhi; Lakshmi Publications, 1953
2. Raghunathan, Harriet: Readings in Classical Literature, Delhi; Worldview Publications, 2013
3. Aristotle, *Poetics*, translated with an introduction and notes by Malcolm Heath, (London: Penguin, 1996) chaps. 6–17, 23, 24, and 26.
4. Plato, *The Republic*, Book X, tr. Desmond Lee (London: Penguin, 2007).

## II Semester

### Paper 3: Indian Writing in English (EGC 2.1)

Credits: 6

- Unit I** : R.K. Narayan *Swami and Friends*  
**Unit II** : Anita Desai *In Custody*  
**Unit III** : (a) H.L.V. Derozio 'Freedom to the Slave' 'The Orphan Girl'  
(b) Kamala Das 'Introduction' 'My Grandmother's House'  
**Unit IV** : (a) Nissim Ezekiel 'Enterprise' 'The Night of the Scorpion'  
(b) Robin S. Ngangom 'The Strange Affair of Robin S. Ngangom'  
'A Poem for Mother'  
**Unit V** : (a) Mulk Raj Anand 'Two Lady Rams'  
(b) Salman Rushdie 'The Free Radio'  
(c) Rohinton Mistry 'Swimming Lesson'  
(d) Shashi Deshpande 'The Intrusion'

## Suggested Topics and Background Prose Readings for Class Presentations

### Topics

Indian English  
Indian English Literature and its Readership  
Themes and Contexts of the Indian English Novel  
The Aesthetics of Indian English Poetry  
Modernism in Indian English Literature

### Readings

1. Raja Rao, Foreword to *Kanthapura* (New Delhi: OUP, 1989) pp. v–vi.
2. Salman Rushdie, 'Commonwealth Literature does not exist', in *Imaginary Homelands* (London: Granta Books, 1991) pp. 61–70.
3. Meenakshi Mukherjee, 'Divided by a Common Language', in *The Perishable Empire* (New Delhi: OUP, 2000) pp. 187–203.
4. Bruce King, 'Introduction', in *Modern Indian Poetry in English* (New Delhi: OUP, 2nd edn, 2005) pp. 1–10.

## Paper 4: British Poetry and Drama: 14th to 17th Centuries (EGC 2.2)

Credits: 6

- Unit I:** History of English Literature: an overview
- Unit II:** (a) Geoffrey Chaucer *The Wife of Bath's Prologue*  
(b) Edmund Spenser Selections from *Amoretti*: Sonnet LXVII 'Like as a huntsman...' Sonnet LVII 'Sweet warrior..' Sonnet LXXV 'One day I wrote her name...'
- Unit III:** John Donne 'The Sunne Rising' 'Batter My Heart' 'Valediction: forbidding mourning'
- Unit IV:** Christopher Marlowe *Doctor Faustus*
- Unit V:** William Shakespeare *Macbeth*

### Suggested Topics and Background Prose Readings for Class Presentations

#### Topics

Renaissance Humanism  
The Stage, Court and City  
Religious and Political Thought  
Ideas of Love and Marriage  
The Writer in Society

#### Readings

1. Pico Della Mirandola, excerpts from the *Oration on the Dignity of Man*, in *The Portable Renaissance Reader*, ed. James Bruce Ross and Mary Martin McLaughlin (New York: Penguin Books, 1953) pp. 476–9.
2. John Calvin, 'Predestination and Free Will', in *The Portable Renaissance Reader*, ed. James Bruce Ross and Mary Martin McLaughlin (New York: Penguin Books, 1953) pp. 704–11.
3. Baldassare Castiglione, 'Longing for Beauty' and 'Invocation of Love', in Book 4 of *The Courtier*, 'Love and Beauty', tr. George Bull (Harmondsworth: Penguin, rpt. 1983) pp. 324–8, 330–5.
4. Philip Sidney, *An Apology for Poetry*, ed. Forrest G. Robinson (Indianapolis: Bobbs-Merrill, 1970) pp. 13–18.

## III Semester

### Paper 5: American Literature (EGC 3.1)

Credits: 6

- Unit I** : Tennessee Williams: *The Glass Menagerie*
- Unit II** : Toni Morrison *Beloved*
- Unit III:** (a) Edgar Allan Poe 'The Purloined Letter'  
(b) F. Scott Fitzgerald 'The Crack-up'
- Unit IV:** (a) William Faulkner 'Dry September'  
(b) Anne Bradstreet 'The Prologue'
- Unit V:** (a) Walt Whitman Selections from *Leaves of Grass*: 'O Captain, My Captain' 'Passage to India' (lines 1–68)  
(b) Alexie Sherman Alexie 'Crow Testament' 'Evolution'

## Suggested Topics and Background Prose Readings for Class Presentations

### Topics

The American Dream  
Social Realism and the American Novel  
Folklore and the American Novel  
Black Women's Writings  
Questions of Form in American Poetry

### Readings

1. Hector St John Crevecoeur, 'What is an American', (Letter III) in *Letters from an American Farmer* (Harmondsworth: Penguin, 1982) pp. 66–105.
2. Frederick Douglass, *A Narrative of the life of Frederick Douglass* (Harmondsworth: Penguin, 1982) chaps. 1–7, pp. 47–87.
3. Henry David Thoreau, 'Battle of the Ants' excerpt from 'Brute Neighbours', in *Walden* (Oxford: OUP, 1997) chap. 12.
4. Ralph Waldo Emerson, 'Self Reliance', in *The Selected Writings of Ralph Waldo Emerson*, ed. with a biographical introduction by Brooks Atkinson (New York: The Modern Library, 1964).
5. Toni Morrison, 'Romancing the Shadow', in *Playing in the Dark: Whiteness and Literary Imagination* (London: Picador, 1993) pp. 29–39.

## Paper 6: Popular Literature (EGC 3.2)

Credits: 6

- Unit I** : Lewis Carroll *Through the Looking Glass*  
**Unit II** : Agatha Christie *The Murder of Roger Ackroyd*  
**Unit III** : Shyam Selvadurai *Funny Boy*  
**Unit IV** : Durgabai Vyam and Subhash Vyam *Bhimayana: Experiences of Untouchability*/Autobiographical Notes on Ambedkar (For the Visually Challenged students)  
**Unit V** : George Orwell *Animal Farm*

## Suggested Topics and Background Prose Readings for Class Presentations

### Topics

Coming of Age  
The Canonical and the Popular  
Caste, Gender and Identity  
Ethics and Education in Children's Literature  
Sense and Nonsense  
The Graphic Novel

### Readings

1. Chelva Kanaganayakam, 'Dancing in the Rarefied Air: Reading Contemporary Sri Lankan Literature' (*ARIEL*, Jan. 1998) rpt, Malashri Lal, Alamgir Hashmi, and Victor J. Ramraj, eds., *Post Independence Voices in South Asian Writings* (Delhi: Doaba Publications, 2001) pp. 51–65.
2. Sumathi Ramaswamy, 'Introduction', in *Beyond Appearances?: Visual Practices and Ideologies in Modern India* (Sage: Delhi, 2003) pp. xiii–xxix.
3. Leslie Fiedler, 'Towards a Definition of Popular Literature', in *Super Culture: American Popular Culture and Europe*, ed. C.W.E. Bigsby (Ohio: Bowling Green University Press, 1975) pp. 29–38.
4. Felicity Hughes, 'Children's Literature: Theory and Practice', *English Literary History*, vol. 45, 1978, pp. 542–61.

## Paper 7: British Poetry and Drama: 17th and 18th Centuries (EGC 3.3)

Credits: 6

<b>Unit I</b>	:	John Milton <i>Paradise Lost: Book 1 (Line 1-282)</i>
<b>Unit II</b>	:	John Milton <i>Paradise Lost: Book 1 (Line 283-798)</i>
<b>Unit III</b>	:	John Webster <i>The Duchess of Malfi</i>
<b>Unit IV</b>	:	Aphra Behn <i>The Rover</i>
<b>Unit V</b>	:	Alexander Pope <i>The Rape of the Lock</i>

### Suggested Topics and Background Prose Readings for Class Presentations

#### Topics

Religious and Secular Thought in the 17th Century  
The Stage, the State and the Market  
The Mock-epic and Satire  
Women in the 17th Century  
The Comedy of Manners

#### Readings

1. The Holy Bible, *Genesis*, chaps. 1–4, *The Gospel according to St. Luke*, chaps. 1–7 and 22–4.
2. Niccolo Machiavelli, *The Prince*, ed. and tr. Robert M. Adams (New York: Norton, 1992) chaps. 15, 16, 18, and 25.
3. Thomas Hobbes, selections from *The Leviathan*, pt. I (New York: Norton, 2006) chaps. 8, 11, and 13.
4. John Dryden, 'A Discourse Concerning the Origin and Progress of Satire', in *The Norton Anthology of English Literature*, vol. 1, 9th edn, ed. Stephen Greenblatt (New York: Norton 2012) pp. 1767–8.

## IV Semester

### Paper 8: British Literature: 18th Century (EGC 4.1)

Credits: 6

<b>Unit I</b>	:	William Congreve <i>The Way of the World</i>
<b>Unit II</b>	:	Jonathan Swift <i>Gulliver's Travels</i> (Books III and IV)
<b>Unit III</b>	:	Samuel Johnson 'London'
<b>Unit IV</b>	:	Thomas Gray 'Elegy Written in a Country Churchyard'
<b>Unit V</b>	:	Laurence Sterne <i>The Life and Opinions of Tristram Shandy, Gentleman</i>

### Suggested Topics and Background Prose Readings for Class Presentations

#### Topics

The Enlightenment and Neoclassicism  
Restoration Comedy  
The Country and the City  
The Novel and the Periodical Press

## Readings

1. Jeremy Collier, *A Short View of the Immorality and Profaneness of the English Stage* (London: Routledge, 1996).
2. Daniel Defoe, 'The Complete English Tradesman' (Letter XXII), 'The Great Law of Subordination Considered' (Letter IV), and 'The Complete English Gentleman', in *Literature and Social Order in Eighteenth-Century England*, ed. Stephen Copley (London: Croom Helm, 1984).
3. Samuel Johnson, 'Essay 156', in *The Rambler*, in *Selected Writings: Samuel Johnson*, ed. Peter Martin (Cambridge, Mass.: Harvard University Press, 2009) pp. 194–7; *Rasselas* Chapter 10; 'Pope's Intellectual Character: Pope and Dryden Compared', from *The Life of Pope*, in *The Norton Anthology of English Literature*, vol. 1, ed. Stephen Greenblatt, 8th edn (New York: Norton, 2006) pp. 2693–4, 2774–7.

## Paper 9: British Romantic Literature(EGC 4.2)

### Credits: 6

- Unit I:** (a) William Blake 'The Lamb', 'The Chimney Sweeper' (from *The Songs of Innocence and The Songs of Experience*) 'The Tyger' (*The Songs of Experience*) 'Introduction' to *The Songs of Innocence*  
(b) Robert Burns 'A Bard's Epitaph'
- Unit II:** (a) William Wordsworth 'Tintern Abbey' 'Ode: Intimations of Immortality'  
(b) Samuel Taylor Coleridge 'Kubla Khan' 'Dejection: An Ode'
- Unit III:** Lord George Gordon Noel Byron 'Childe Harold': canto III, verses 36–45 (Lines 316–405); canto IV, verses 178–86 (lines 1594–674)
- Unit IV :** (a) Percy Bysshe Shelley 'Ode to the West Wind' 'Ozymandias' 'Hymn to Intellectual Beauty'  
(b) John Keats 'Ode to a Nightingale' 'To Autumn' 'On First Looking into Chapman's Homer'
- Unit V:** Mary Shelley *Frankenstein*

## Suggested Topics and Background Prose Readings for Class Presentations

### Topics

- Reason and Imagination
- Conceptions of Nature
- Literature and Revolution
- The Gothic
- The Romantic Lyric

### Readings

1. William Wordsworth, 'Preface to Lyrical Ballads', in *Romantic Prose and Poetry*, ed. Harold Bloom and Lionel Trilling (New York: OUP, 1973) pp. 594–611.
2. John Keats, 'Letter to George and Thomas Keats, 21 December 1817', and 'Letter to Richard Woodhouse, 27 October, 1818', in *Romantic Prose and Poetry*, ed. Harold Bloom and Lionel Trilling (New York: OUP, 1973) pp. 766–68, 777–8.
3. Jean-Jacques Rousseau, 'Preface' to *Emile or Education*, tr. Allan Bloom (Harmondsworth: Penguin, 1991).  
Samuel Taylor Coleridge, *Biographia Literaria*, ed. George Watson (London: Everyman, 1993) chap. XIII, pp. 161–66.



## Paper 10: British Literature: 19th Century (EGC 4.3)

Credits: 6

**Unit I:** Jane Austen *Pride and Prejudice*

**Unit II:** Charlotte Bronte *Jane Eyre*

**Unit III:** Charles Dickens *Hard Times*

**Unit IV:** (a) Alfred Tennyson 'The Lady of Shalott' 'Ulysses' 'The Defence of Lucknow'  
(b) Robert Browning 'My Last Duchess' 'The Last Ride Together' 'Fra Lippo Lippi'

**Unit V:** Christina Rossetti 'The Goblin Market'

### Suggested Topics and Background Prose Readings for Class Presentations

#### Topics

Utilitarianism

The 19th Century Novel

Marriage and Sexuality

The Writer and Society

Faith and Doubt

The Dramatic Monologue

#### Readings

1. Karl Marx and Friedrich Engels, 'Mode of Production: The Basis of Social Life', 'The Social Nature of Consciousness', and 'Classes and Ideology', in *A Reader in Marxist Philosophy*, ed. Howard Selsam and Harry Martel (New York: International Publishers, 1963) pp. 186–8, 190–1, 199–201.
2. Charles Darwin, 'Natural Selection and Sexual Selection', in *The Descent of Man in The Norton Anthology of English Literature*, 8th edn, vol. 2, ed. Stephen Greenblatt (New York: Norton, 2006) pp. 1545–9.
3. John Stuart Mill, *The Subjection of Women in Norton Anthology of English Literature*, 8th edn, vol. 2, ed. Stephen Greenblatt (New York: Norton, 2006) chap. 1, pp. 1061–9.

## V Semester

### Paper 11: Women's Writing (EGC 5.1)

Credits: 6

**Unit I:** (a) Emily Dickinson 'I cannot live with you' 'I'm wife; I've finished that'

(b) Sylvia Plath 'Daddy' 'Lady Lazarus'

(c) Eunice De Souza 'Advice to Women' 'Bequest'

**Unit II:** Alice Walker *The Color Purple*

**Unit III:** (a) Charlotte Perkins Gilman 'The Yellow Wallpaper'

(b) Katherine Mansfield 'Bliss'

**Unit IV:** Mary Wollstonecraft *A Vindication of the Rights of Woman* (New York: Norton, 1988) chap. 1, pp. 11–19; chap. 2, pp. 19–38.

**Unit V:** (a) Ramabai Ranade 'A Testimony of our Inexhaustible Treasures', in *Pandita Ramabai Through Her Own Words: Selected Works*, tr. Meera Kosambi (New Delhi: OUP, 2000) pp. 295–324

(b) Rassundari Debi Excerpts from *Amar Jiban* in Susie Tharu and K. Lalita, eds., *Women's Writing in India*, vol. 1 (New Delhi: OUP, 1989) pp. 191–2.

## Suggested Topics and Background Prose Readings for Class Presentations

### Topics

The Confessional Mode in Women's Writing  
Sexual Politics  
Race, Caste and Gender  
Social Reform and Women's Rights

### Readings

1. Virginia Woolf, *A Room of One's Own* (New York: Harcourt, 1957) chaps. 1 and 6.
2. Simone de Beauvoir, 'Introduction', in *The Second Sex*, tr. Constance Borde and Shiela Malovany-Chevallier (London: Vintage, 2010) pp. 3–18.
3. Kumkum Sangari and Sudesh Vaid, eds., 'Introduction', in *Recasting Women: Essays in Colonial History* (New Delhi: Kali for Women, 1989) pp. 1–25.
4. Chandra Talapade Mohanty, 'Under Western Eyes: Feminist Scholarship and Colonial Discourses', in *Contemporary Postcolonial Theory: A Reader*, ed. Padmini Mongia (New York: Arnold, 1996) pp. 172–97.

## Paper 12: British Literature: The Early 20th Century (EGC 5.2)

Credits: 6

**Unit I:** Joseph Conrad *Heart of Darkness*

**Unit II:** D.H. Lawrence *Sons and Lovers*

**Unit III:** Virginia Woolf *Mrs Dalloway*

**Unit IV:** W.B. Yeats 'Leda and the Swan' 'The Second Coming' 'No Second Troy'  
'Sailing to Byzantium'

**Unit V:** T.S. Eliot 'The Love Song of J. Alfred Prufrock' 'Sweeney among the Nightingales' 'The Hollow Men'

## Suggested Topics and Background Prose Readings for Class Presentations

### Topics

Modernism, Post-modernism and non-European Cultures  
The Women's Movement in the Early 20th Century  
Psychoanalysis and the Stream of Consciousness  
The Uses of Myth  
The Avant Garde

### Readings

1. Sigmund Freud, 'Theory of Dreams', 'Oedipus Complex', and 'The Structure of the Unconscious', in *The Modern Tradition*, ed. Richard Ellman et. al. (Oxford: OUP, 1965) pp. 571, 578–80, 559–63.
2. T.S. Eliot, 'Tradition and the Individual Talent', in *Norton Anthology of English Literature*, 8th edn, vol. 2, ed. Stephen Greenblatt (New York: Norton, 2006) pp. 2319–25.
3. Raymond Williams, 'Introduction', in *The English Novel from Dickens to Lawrence* (London: Hogarth Press, 1984) pp. 9–27.

## VI Semester

### Paper 13: Naga Writings in English : Poetry & Fiction (EGC 6.1)

Credits: 6

**Unit I:** A Study on The Naga Ethnic, Social, Political and Literary world.

**Unit II:** Monalisa Changkija '*Of A People Answered I, II & III*'

**Unit III:** Easterine Kire '*A Respectable Women*

**Unit IV:** Nini Lungalang '*Dust, Nocturne & Mirror*

**Unit V:** Temsula Ao '*Aosenla's Lover*

### Suggested Topics and Background Prose Readings for Class Presentations

#### Topics

Gender Resistance

Gender Identity

The Writer and Society

Folklores & Folktales

Myths and Legends

#### Readings

1. Changkija, Monalisa: *Monsoon Mourning*, Dimapur: Heritage Publishing House, 2013.
2. Sebastian, A.J: *Critical Essays on Naga Poets & Fiction Writers In English*, Kohima: N.V. Press, 2016
3. Changkija, Monalisa: *Weapons of Words on Pages of Pain*, Dimapur: Heritage Publishing House, 2<sup>nd</sup> edn.2013.
4. Temsula Ao. *The Ao Naga Oral Tradition*, Baroda: Bhasha Publications, 1999
5. Inato Yekheto Shikhu. *A Rediscovery and Rebuilding of Naga Cultural Values*. New Delhi: Regency Publications, 2007
6. Foucault, Michel, 'Truth & Power', tr. Alessandro Fontana & Pasquah Pasquino. New York: Pantheon, 1977.

### Paper 14: Postcolonial Literatures (EGC 6.2)

Credits: 6

**Unit I:** Chinua Achebe '*Things Fall Apart*

**Unit II:** Gabriel Garcia Marquez '*Chronicle of a Death Foretold*

**Unit III:** (a) Bessie Head '*The Collector of Treasures*'

(b) Ama Ata Aidoo '*The Girl who can*'

(c) Grace Ogot '*The Green Leaves*'

**Unit IV:** (a) Pablo Neruda '*Tonight I can Write*' '*The Way Spain Was*'

(b) Derek Walcott '*A Far Cry from Africa*' '*Names*'

**Unit V:** (a) David Malouf '*Revolving Days*' '*Wild Lemons*'

(b) Mamang Dai '*Small Towns and the River*' '*The Voice of the Mountain*'

### Suggested Topics and Background Prose Readings for Class Presentations

#### Topics

De-colonization, Globalization and Literature

Literature and Identity Politics

Writing for the New World Audience  
Region, Race, and Gender  
Postcolonial Literatures and Questions of Form

### Readings

1. Franz Fanon, 'The Negro and Language', in *Black Skin, White Masks*, tr. Charles Lam Markmann (London: Pluto Press, 2008) pp. 8–27.
2. Ngugi wa Thiong'o, 'The Language of African Literature', in *Decolonising the Mind* (London: James Curry, 1986) chap. 1, sections 4–6.
3. Gabriel Garcia Marquez, the Nobel Prize Acceptance Speech, in *Gabriel Garcia Marquez: New Readings*, ed. Bernard McGuirk and Richard Cardwell (Cambridge: Cambridge University Press, 1987).

## B. A. English Honours under CBCS II. Discipline Specific Elective Detailed Syllabi

(To teach in V Semester)

**Paper 1: Literary Criticism (EGD 5.3)**

**Credits: 6**

- Unit I:** William Wordsworth: Preface to the *Lyrical Ballads* (1802)  
**Unit II:** Virginia Woolf: Modern Fiction  
**Unit III:** T.S. Eliot: "The Function of Criticism" 1920  
**Unit IV:** I.A. Richards: *Principles of Literary Criticism* Chapters 1,2 and 34.  
London 1924 and *Practical Criticism*. London, 1929  
**Unit V:** Cleanth Brooks: "The Heresy of Paraphrase", and "The Language of Paradox" in *The Well-Wrought Urn: Studies in the Structure of Poetry* (1947)

### Suggested Topics and Background Prose Readings for Class Presentations

#### Topics

- Summarising and Critiquing
- Point of View
- Reading and Interpreting
- Media Criticism
- Plot and Setting
- Citing from Critics' Interpretations

### Suggested Readings

1. C.S. Lewis: Introduction in *An Experiment in Criticism*, Cambridge University Press 1992
2. M.H. Abrams: *The Mirror and the Lamp*, Oxford University Press, 1971
3. Rene Wellek, Stephen G. Nicholas: *Concepts of Criticism*, Connecticut, Yale University 1963
4. Taylor and Francis Eds. *An Introduction to Literature, Criticism and Theory*, Routledge, 1996

## Paper 2: Literature of the Indian Diaspora (EGD 5.4)

Credits: 6

- Unit I:** Introduction to Indian Diasporic Writing  
**Unit II:** M. G. Vassanji *The Book of Secrets* (Penguin, India)  
**Unit III:** Rohinton Mistry *A Fine Balance* (Alfred A Knopf)  
**Unit IV:** Meera Syal *Anita and Me* (Harper Collins)  
**Unit V:** Jhumpa Lahiri *The Namesake* (Houghton Mifflin Harcourt)

### Suggested Topics and Background Prose Readings for Class Presentations

#### Topics

The Diaspora  
Nostalgia  
New Medium  
Alienation

#### Reading

1. "Introduction: The diasporic imaginary" in Mishra, V. (2008). *Literature of the Indian diaspora*. London: Routledge
2. "Cultural Configurations of Diaspora," in Kalra, V. Kaur, R. and Hutynuk, J. (2005). *Diaspora & hybridity*. London: Sage Publications.
3. "The New Empire within Britain," in Rushdie, S. (1991). *Imaginary Homelands*. London: Granta Books.

### (To teach in VI Semester)

## Paper 3: Science Fiction and Detective Literature (EGD 6.3)

Credits: 6

- Unit I:** Wilkie Collins *The Woman in White*  
**Unit II:** Arthur Conan Doyle *The Hound of the Baskervilles*  
**Unit III:** Raymond Chandler *The Big Sleep*  
**Unit IV:** H.R.F. Keating *Inspector Ghote Goes by Train*  
**Unit V:** Isaac Asimov *Nighfall*

### Suggested Topics and Readings for Class Presentation

#### Topics

Crime across the Media  
Constructions of Criminal Identity  
Cultural Stereotypes in Crime Fiction  
Crime Fiction and Cultural Nostalgia  
Crime Fiction and Ethics  
Crime and Censorship

### (To teach in VI Semester)

## Paper 4: Literary Theory (EGD 6.4)

Credits: 6

- Unit I** : **Postmodernism**
- (a) Ronald Barthes "From Work to Text" in *Postmodern Literary Theory: An Anthology*. Niall, Lucy (ed), Wiley-Blackwell, 2000
  - (b) Jean Francois Lyotard: *The Postmodern Condition in Literary Theory: An Anthology*. Julie Rivkin & Michael Ryan (eds) Blackwell Publishing, 2004

- Unit II** : **Marxism**
- (a) Antonio Gramsci, 'The Formation of the Intellectuals' and 'Hegemony (Civil Society) and Separation of Powers', in *Selections from the Prison Notebooks*, ed. and tr. Quentin Hoare and Geoffrey Novell Smith (London: Lawrence and Wishart, 1971) pp. 5, 245–6.
  - (b) Louis Althusser, 'Ideology and Ideological State Apparatuses', in *Lenin and Philosophy and Other Essays* (New Delhi: Aakar Books, 2006) pp. 85–126.
- Unit III** : **Feminism**
- (a) Elaine Showalter, 'Twenty Years on: *A Literature of Their Own* Revisited', in *A Literature of Their Own: British Women Novelists from Bronte to Lessing* (1977. Rpt. London: Virago, 2003) pp. xi–xxxiii.
  - (b) Luce Irigaray, 'When the Goods Get Together' (from *This Sex Which is Not One*), in *New French Feminisms*, ed. Elaine Marks and Isabelle de Courtivron (New York: Schocken Books, 1981) pp. 107–10.
- Unit IV** : **Poststructuralism**
- (a) Jacques Derrida, 'Structure, Sign and Play in the Discourse of the Human Science', tr. Alan Bass, in *Modern Criticism and Theory: A Reader*, ed. David Lodge (London: Longman, 1988) pp. 108–23.
  - (b) Michel Foucault, 'Truth and Power', in *Power and Knowledge*, tr. Alessandro Fontana and Pasquale Pasquino (New York: Pantheon, 1977) pp. 109–33.
- Unit V** : **Postcolonial Studies**
- (a) Mahatma Gandhi, 'Passive Resistance' and 'Education', in *Hind Swaraj and Other Writings*, ed. Anthony J Parel (Delhi: CUP, 1997) pp. 88–106.
  - (b) Edward Said, 'The Scope of Orientalism' in *Orientalism* (Harmondsworth: Penguin, 1978) pp. 29–110.
  - (c) Aijaz Ahmad, "'Indian Literature": Notes towards the Definition of a Category', in *In Theory: Classes, Nations, Literatures* (London: Verso, 1992) pp. 243–285.

### Suggested Background Prose Readings and Topics for Class Presentations

#### Topics

The East and the West  
 Questions of Alterity  
 Power, Language, and Representation  
 The State and Culture

#### Readings

1. Terry Eagleton, *Literary Theory: An Introduction* (Oxford: Blackwell, 2008).
2. Peter Barry, *Beginning Theory* (Manchester: Manchester University Press, 2002)

**B. A. English under CBCS  
III Generic Elective (GE)  
Detailed Syllabi**

**(To teach in I Semester)**

**Paper 1: Academic Writing and Composition (EGG 1.4)**

**Credits: 6**

- Unit I** : Introduction to the Writing Process  
**Unit II** : Introduction to the Conventions of Academic Writing  
**Unit III** : Writing in one's own words: Summarizing and Paraphrasing  
**Unit IV** : Critical Thinking: Syntheses, Analyses, and Evaluation  
**Unit V** : Citing Resources; Editing, Book and Media Review

**Suggested Readings**

1. Liz Hamp-Lyons and Ben Heasley, *Study writing: A Course in Writing Skills for Academic Purposes* (Cambridge: CUP, 2006).
2. Renu Gupta, *A Course in Academic Writing* (New Delhi: Orient BlackSwan, 2010).
3. Ilona Leki, *Academic Writing: Exploring Processes and Strategies* (New York: CUP, 2nd edn, 1998).
4. Gerald Graff and Cathy Birkenstein, *They Say/I Say: The Moves That Matter in Academic Writing* (New York: Norton, 2009).

**(To teach in II Semester)**

**Paper 2: Media and Communication Skills (EGG 2.4)**

**Credits: 6**

**Unit I: Introduction to Mass Communication**

1. Mass Communication and Globalization
2. Forms of Mass Communication

**Topics for Student Presentations:**

- a. Case studies on current issues Indian journalism
- b. Performing street plays
- c. Writing pamphlets and posters, etc.

**Unit II: Advertisement**

1. Types of advertisements
2. Advertising ethics
3. How to create advertisements/storyboards

**Topics for Student Presentations:**

- a. Creating an advertisement/visualization
- b. Enacting an advertisement in a group
- c. Creating jingles and taglines

**Unit III: Media Writing**

1. Scriptwriting for TV and Radio

**Unit IV: Media Writing**

1. Writing News Reports and Editorials
2. Editing for Print and Online Media

**Topics for Student Presentations:**

- a. Script writing for a TV news/panel discussion/radio programme/hosting radio programmes on community radio
- b. Writing news reports/book reviews/film reviews/TV program reviews/interviews
- c. Editing articles
- d. Writing an editorial on a topical subject

**Unit V: Introduction to Cyber Media and Social Media**

1. Types of Social Media
2. The Impact of Social Media
3. Introduction to Cyber Media

**(To teach in III Semester)****Paper 3: Contemporary India: Women and Empowerment (EGG 3.5)****Credits: 6****Unit I:** Social Construction of Gender (Masculinity and Femininity Patriarchy)**Unit II:** History of Women's Movements in India (Pre-independence, post independence) Women, Nationalism, Partition Women and Political Participation**Unit III:** Women and Law Women and the Indian Constitution Personal Laws (Customary practices on inheritance and Marriage) (Supplemented by workshop on legal awareness)**Unit IV:** Women and Environment State interventions, Domestic violence, Female foeticide, sexual harassment**Unit V:** Female Voices: *Sultana's Dream*  
Dalit Discourse: \* Details awaited**(To teach in the IV Semester)****Paper 4: Language, Literature and Culture (EGG 4.5)****Credits: 6**

Five (5) Essays from An anthology of writings on diversities in India

Editorial Board: Department of English, University of Delhi

**B. A. English under CBCS**  
**1V. Ability Enhancement Course**  
**Detailed Syllabi**  
**Compulsory**

**(To teach in I Semester)****Paper 1: English/MIL Communication (EGA 1.3)****English Communication****Credits: 2****Preamble:**

The purpose of this course is to introduce students to the theory, fundamentals and tools of communication and to develop in them vital communication skills which should be integral to personal, social and professional interactions. One of the critical links among human beings and an important thread that binds society together is the ability to share thoughts, emotions and ideas through various means of communication: both verbal and non-verbal. In the context of rapid globalization and increasing recognition of social and cultural pluralities, the significance of clear and effective communication has substantially enhanced.



The present course hopes to address some of these aspects through an interactive mode of teaching-learning process and by focusing on various dimensions of communication skills. Some of these are: Language of communication, various speaking skills such as personal communication, social interactions and communication in professional situations such as interviews, group discussions and office environments, important reading skills as well as writing skills such as report writing, note-taking etc.

While, to an extent, the art of communication is natural to all living beings, in today's world of complexities, it has also acquired some elements of science. It is hoped that after studying this course, students will find a difference in their personal and professional interactions.

The recommended readings given at the end are only suggestive; the students and teachers have the freedom to consult other materials on various units/topics given below. Similarly, the questions in the examination will be aimed towards assessing the skills learnt by the students rather than the textual content of the recommended books.

#### **Unit I: Introduction**

- (a) Theory of Communication,
- (b) Types and modes of Communication

#### **Unit II: Language of Communication:**

Personal, Social and Business  
Barriers and Strategies  
Intra-personal, Inter-personal and Group communication

#### **Unit III: Speaking Skills:**

Monologue  
Dialogue  
Group Discussion  
Effective Communication/ Miscommunication  
Interview  
Public Speech

#### **Unit IV : Reading and Understanding**

Close Reading  
Comprehension  
Summary Paraphrasing

#### **Unit V: Writing Skills**

Documenting (Bibliography, Footnote, Endnote)  
Report Writing (Magazine & Newspaper Report)  
Making notes  
Letter writing (Job application with CV)

#### **Recommended Readings:**

1. *Fluency in English* - Part II, Oxford University Press, 2006.
2. *Business English*, Pearson, 2008.
3. *Language, Literature and Creativity*, Orient Blackswan, 2013.
4. *Language through Literature* (forthcoming) ed. Dr. Gauri Mishra, Dr Ranjana Kaul, Dr Brati Biswas

## **B. A. English under CBCS V. Skilled Enhancement Course**

## Detailed Syllabi

(To teach in III Semester)

**Paper 1: Creative Writing (EGS 3.4)**

**Credits: 2**

<b>Unit I</b>	:	What is Creative Writing?
<b>Unit II</b>	:	The Art and Craft of Writing
<b>Unit III</b>	:	Modes of creative Writing
<b>Unit IV</b>	:	Writing for the Media
<b>Unit V</b>	:	Preparing for Publication

**Recommended book: Creative writing: A Beginner's Manual by Anjana Neira Dev and Others, Published by Pearson, Delhi, 2009.**

(To teach in the IV Semester)

**Paper 2: Soft Skills (EGS 4.4)**

**Credits: 2**

Teamwork  
Emotional Intelligence  
Adaptability  
Leadership  
Problem solving

### ***Suggested Readings***

1. *English and Soft Skills*. S.P. Dhanavel. Orient BlackSwan 2013
2. *English for Students of Commerce: Precis, Composition, Essays, Poems* eds. Kaushik, et al.

**Department of History**  
**Course Curriculum For B.A. (honours) History**

Semester	Core Course (C)	Ability Enhancement Course (A)	Skill Enhancement Course (S)	Discipline Specific Elective Course (D)	Generic Elective Course(G)
First	HSC 1.1 History of India-1	EGA 1.3 English Communication			HSG 1.4 History of India (Earliest Time s upto to 300 CE)
	HSC 1.2 Social Formations and Cultural Patterns of the Ancient World				
Second	HSC 2.1 History of India II	ESA 2.3 Environmental Studies			HSG 2.4 History of India (c. 300-1206)
	HSC 2.2 Social Formations and Cultural Patterns of the Medieval World				
Third	HSC 3.1 History of India III (750-1206)		HSS 3.4 Understanding Heritage		HSG 3.5 History of India (1206 – 1707)
	HSC 3.2 Rise of Modern west I				
	HSC 3.3 History of North east India (1822-1972) (				
Fourth	HSC 4.1 History of India IV (1206-1707)		HSS 4.4 Archives and Museums		HSG 4.5 History of India (1707 – 1950)
	HSC 4.2 Rise of Modern West II				
	HSC 4.3 Political History of the Nagas				
Fifth	HSC 5.1 History of India V (1707-1857)			HSD 5.3 History of United States of America I	
	HSC 5.2 History of Modern Europe I			HSD 5.4 History of Modern East Asia I (1840- 1945)	
Sixth	HSC 6.1 History of India VI (1857-1950)			HSD 6.3 History of united States of America II	
	HSC 6.2 History of Modern Europe II			HSD 6.4 History of Modern East Asia II (1868- 1945)	
No.of Courses (Credits)	14 (84)	2 (4)	2 (4)	4 (24)	4 (24)

## Structure of B.A (Hons) History Course under CBCS

### CORE COURSE (14)

- Paper I : History of India-I
- Paper II : Social Formations and Cultural Patterns of the Ancient World
- Paper III : History of India-II
- Paper IV : Social Formations and Cultural Patterns of the Medieval World
- Paper V : History of India-III (750-1206)
- Paper VI : Rise of the Modern West-I
- Paper VII : History of North East India (1822-1972)
- Paper VIII : History of India IV (1206-1707)
- Paper IX : Rise of the Modern West -II
- Paper X : Political History of the Nagas
- Paper XI : History of India-V (1707-1857)
- Paper XII : History of Modern Europe- I
- Paper XIII : History of India-VI (1857-1950)
- Paper XIV : History of Modern Europe- II

### Discipline Specific Elective

- Paper I: History of United States of America –I
- Paper II-History of Modern East Asia-I (1840-1945)
- Paper III: History of United States of America –II
- Paper IV-History of Modern East Asia-II ( 1868-1945)

### Generic Elective (Interdisciplinary)

- GE 1: History of India (Earliest Times up to 300 CE)
- GE 2: History of India (c. 300 to 1206)
- GE 3: History of India (1206 to 1707)
- GE 4: History of India (1707 to 1950)

### Ability Enhancement Course (AEC)

#### Compulsory-II Papers

- English/ MIL Communication
- Environmental Studies

### Skilled Enhancement Courses (SEC)

- Any Two
- Paper-I Understanding Heritage
- Paper-II: Art Appreciation: An Introduction to Indian Art
- Paper-III: Archives and Museums
- Paper-IV: Understanding Popular Culture

**Detailed Syllabus  
Core Courses-14  
B.A (Hons), History  
Each Unit will carry 14 Marks**

**HSC 1.1 : HISTORY OF INDIA-I**

**I. Reconstructing Ancient Indian History:**

- [a] The Indian Subcontinent: Landscapes and Environments
- [b] Sources and tools of Historical Reconstruction.
- [c] Historical Interpretations (with special reference to Gender and Regions)

**II. Pre-historic Hunter-Gatherers:**

- [a] Palaeolithic cultures- Sequence and distribution; Tool Technology; Subsistence Patterns; Art and Cult.
- [b] Mesolithic cultures- Regional and Chronological distribution; Tool technology; Economy; Art.

**III. The Advent of Food Production:**

Regional and chronological distribution of the Neolithic and Chalcolithic cultures: subsistence, and patterns of exchange.

**IV. The Harappan Civilization:**

Origins; settlement patterns and town planning; agrarian base; craft productions and trade; social and political organization; religious beliefs and practices; art; the problem of urban decline.

**V. Cultures in transition up to c.600 BCE in North India:**

The Aryan Question; Settlement Patterns; Technological and Economic Developments; Social Stratification; Political Organization; Religious Philosophy and Practices.

**ESSENTIAL READINGS**

- R.S. Sharma, India's Ancient Past, New Delhi, OUP, 2007  
R. S. Sharma, Material Culture and Social Formations in Ancient India, 1983.  
R.S. Sharma, Looking for the Aryas, Delhi, Orient Longman Publishers, 1995  
D. P. Agrawal, The Archaeology of India, 1985  
Bridget & F. Raymond Allchin, The Rise of Civilization in India and Pakistan, 1983.  
A. L. Basham, The Wonder that Was India, 1971.  
D. K. Chakrabarti, The Archaeology of Ancient Indian Cities, 1997, Paperback.  
D. K. Chakrabarti, The Oxford Companion to Indian Archaeology, New Delhi, 2006.  
H. C. Raychaudhuri, Political History of Ancient India, Rev. ed. with Commentary by B. N. Mukherjee, 1996  
K. A. N. Sastri, ed., History of South India, OUP, 1966.  
Upinder Singh, A History of Ancient and Early Medieval India, 2008.  
Romila Thapar, Early India from the Beginnings to 1300, London, 2002.  
Irfan Habib, A People's History- Vol. -1, PreHistory, 2001, -Vol.-2, Indus Civilization: Including Other Copper Age Cultures and the History of Language Change till 155 B.C., 2002

**Suggested Readings**

- Uma Chakravarti, The Social Dimensions of Early Buddhism. 1997.  
Rajan Gurukul, Social Formations of Early South India, 2010.  
R. Champakalakshmi, Trade. Ideology and urbanization: South India 300 BC- AD 1300,

**HSC 1.2 : SOCIAL FORMATIONS AND CULTURAL PATTERNS  
OF THE ANCIENT WORLD**

**1. Prehistoric Developments:**

- a) Evolution of Human Beings
- b) Palaeolithic and Mesolithic cultures: Tool Technology; Subsistence Patterns; Art
- c) Neolithic Culture: Beginning of Agriculture and Domestication of Animals.

- II. Bronze Age Civilizations** with reference to Mesopotamia (up to the Akkadian Empire)
  - a) Economy
  - b) Social Structure
  - c) Political Organization
  - d) Religious Beliefs and Practices
- III. Transition from the Bronze Age to Iron Age with reference to**
  - a) Minoan Civilization
  - b) Mycenaean Civilization
- IV. Slave society in Ancient Greece:**
  - a) Agrarian Economy
  - b) Urbanization
  - c) Trade.
- V. Polis in ancient Greece:**
  - a) Athens and Sparta
  - b) Athenian Democracy
  - c) Greek Culture.

### ESSENTIAL READINGS

- Burns and Ralph, World Civilizations.
- Cambridge History of Africa, Vol. I.
- V. Gordon Childe, What Happened in History.
- G. Clark, World Prehistory: A New Perspective.
- B. Fagan, People of the Earth.
- Amar Farooqui, Early Social Formations.
- M. I. Finley, The Ancient Economy.
- Jacquetta Hawkes, First Civilizations.
- G. Roux, Ancient Iraq.
- Bai Shaoyi, An Outline History of China.
- H. W. F. Saggs, The Greatness that was Babylon.
- B. Trigger, Ancient Egypt: A Social History.
- UNESCO Series: History of Mankind, Vols. I - III./ or New ed. History of Humanity.
- R. J. Wenke, Patterns in Prehistory.

### SUGGESTED READINGS

- G. E. M. Ste Croix, Class Struggles in the Ancient Greek World.
- J. D. Bernal, Science in History, Vol. I.
- V. Gordon Childe, Social Evolution.
- Glyn Daniel, First Civilizations.
- A. Hauser, A Social History of Art, Vol. I.

### HSC 2.1 : HISTORY OF INDIA II

- I. Economy and Society (circa 600 BCE to circa CE 300):**
  - [a] Expansion of Agrarian economy: Production relations.
  - [b] Urban Growth; Craft Production and Trade in North India.
  - [c] Social Stratification: Class, Varna, Jati, Untouchability; Gender; Marriage and Property Relations

## **II. Changing political formations (circa 600 BCE to circa CE 300):**

- [a] The Rise of Mahajanapadas: Monarchies and ganas/sanghas
- [b] Mauryan Empire: Political structure; Ashoka's Dhamma
- [c] Post-Mauryan Polities with special reference to the Kushanas and the Satavahanas.

## **III. Towards early medieval India [circa CE fourth century to CE 750]:**

- (a) The Nature of Polities: The Gupta empire and its contemporaries with special reference to the Vakatakas
- (b) The Gupta Age as 'Golden Age': Myth or Reality.
- (c) Post- Gupta polities: Pallavas, Western Chalukyas, and Vardhanas
- (d) Varna, proliferation of jatis: changing norms of marriage and property.

## **IV. Religion, philosophy and society (circa 600 BCE- CE 750):**

- (a) Shramanic Traditions with reference to Buddhism and Jainism
- (b) Consolidation of the Brahmanical Tradition: Special Reference to Dharma and Varnashrama.
- (c) Theistic cults (from circa second century BC): Mahayana Buddhism; The Puranic Tradition.

## **V. Cultural developments ( up to circa 750 CE):**

- [a] A brief survey of Sanskrit and Tamil literature.
- [b] Art and Architecture & forms of Patronage; Mauryan, Post-Mauryan, Gupta, Post-Gupta.

## **ESSENTIAL READINGS**

- B. D. Chattopadhyaya, The Making of Early Medieval India, 1994.  
D. P. Chattopadhyaya, History of Science and Technology in Ancient India, 1986.  
D. D. Kosambi, An Introduction to the Study of Indian History, 1975.  
S. K. Maity, Economic Life in Northern India in the Gupta Period, 1970.  
B. P. Sahu (ed), Land System and Rural Society in Early India, 1997.  
K. A. N. Sastri, A History of South India.  
R. S. Sharma, Indian Feudalism, 1980.  
R.S.Sharma, Urban Decay in India, c.300- C1000, Delhi, Munshiram Manohar Lal, 1987  
Romila Thapar, Asoka and the Decline of the Mauryas, 1997.  
Susan Huntington, The Art of Ancient India: Buddhist, Hindu, and Jain, New York, 1985.

## **SUGGESTED READINGS**

- N. N. Bhattacharya, Ancient Indian Rituals and Their Social Contents, 2nd ed., 1996.  
J. C. Harle, The Art and Architecture of the Indian Subcontinent, 1987.  
P. L. Gupta, Coins, 4th ed., 1996.  
Kesavan Veluthat, The Early Medieval in South India, New Delhi, 2009  
H. P. Ray Winds of Change, 1994.  
Romila Thapar, Early India: From the Origins to 1300, 2002.

## **HSC 2.2: SOCIAL FORMATIONS AND CULTURAL PATTERNS OF THE MEDIEVAL WORLD**

### **I. Roman Republic:**

- (a) Society
- (b) Polity
- (c) Economy

### **II. Ancient Rome:**

- (a) Religion
- (b) Culture
- (c) Crises of the Roman Empire

### **III. Economic developments in Feudal Europe (7th to the 14th centuries):**

- (a) Organization of production
- (b) Towns and trade
- (c) Technological developments
- (d) Crisis of feudalism.

### **IV. Medieval Europe:**

- a) The Feudal Society
- b) The Christendom
- c) Rise of Islam
- d) The Crusades

### **V. Societies in Central Islamic Lands:**

- [a] The Tribal Background; Caliphal State; The Rise of Sultanates
- [b] Religious Developments: The origins of Shariah and Sufism

### **ESSENTIAL READINGS**

- Perry Anderson, Passages from Antiquity to Feudalism.  
Marc Bloch, Feudal Society, 2 Vols.  
Cambridge History of Islam, 2 Vols.  
Georges Duby, The Early Growth of the European Economy.  
Fontana, Economic History of Europe, Vol. I (relevant chapters).  
P. K. Hitti, History of the Arabs.  
P. Garnsey and Saller, The Roman Empire.

### **SUGGESTED READINGS**

- S. Ameer Ali, The Spirit of Islam.  
J. Barrowclough, The Medieval Papacy.  
Encyclopedia of Islam, 1st ed., 4 vols.  
M. G. S. Hodgson, The Venture of Islam.

## **HSC 3.1: HISTORY OF INDIA III (750 -1206)**

### **I. Studying Early Medieval India:**

- (a) Sources: texts, epigraphic and numismatic Data
- (b) Features of Indian feudalism
- (c) Rise of the Rajputs and the nature of the state

### **II. Political Structures:**

- (a) Evolution of political structures: Rashtrakutas, Palas, Pratiharas and Cholas
- (b) Arab conquest of Sindh
- (c) Causes and consequences of early Turkish invasions: Mahmud of Ghazni; Shahab-ud-Din of Ghur

### **III. Agrarian Structure and Social Change:**

- (a) Agricultural expansion; crops
- (b) Landlords and peasants
- (c) Proliferation of castes; status of untouchables

### **IV. Trade and Commerce**

- (a) Inter-regional trade
- (b) Maritime trade



- (c) Forms of exchange
- (d) Process of urbanization
- (e) Merchant guilds of South India

**V. Religious and Cultural Developments:**

- (a) Buddhism and Jainism, Vaishavism, Shaivism
- (b) Regional literature
- (c) Art and architecture

**ESSENTIAL READINGS**

R.S. Sharma, Indian Feudalism (circa 300 - 1200).  
 B.D. Chattopadhyaya, The Making of Early Medieval India.  
 R.S. Sharma and K.M. Shrimali, eds, Comprehensive History of India, Vol. IV (A & B).  
 Mohammad Habib and K.A. Nizami, eds, Comprehensive History of India, Vol. V, The Delhi Sultanate  
 Hermann Kulke, ed., The State in India (AD 1000 - AD 1700).

**HSC 3.2: RISE OF THE MODERN WEST - I**

**I. Modern European Economy:**

- (a) Mercantilism
- (b) Capitalism
- (c) Rise of Bourgeoisie Class

**II. Early colonial expansion:**

- (a) Motives, voyages and explorations
- (b) Beginning of the era of colonization
- (c) The Conquests of the Americas

**III. Renaissance:**

- (a) Meaning and Origin
- (b) Features
- (c) Development in art and architecture

**IV. Reformation Movement:**

- (a) Lutheranism
- (b) Zwinglianism
- (c) Calvinism
- (d) Anglicanism
- (e) Counter Reformation

**V. Emergence of European state system:**

- (a) Spain
- (b) France
- (c) England

**ESSENTIAL READINGS**

T.S. Aston and C. H. E. Philpin (eds.), The Brenner Debate  
 H. Butterfield, The Origins of Modern Science.  
 Carlo M. Cipolla, Fontana Economic History of Europe, Vols. II and III.  
 Carlo M. Cipolla, Before the Industrial Revolution, European Society and Economy. 1000 -1700. 3rd ed. (1993)  
 D. C. Coleman (ed.), Revisions in Mercantilism.

Ralph Davis, *The Rise of the Atlantic Economics*.  
 Maurice Dobb, *Studies in the Development of Capitalism*.  
 J. R. Hale, *Renaissance Europe*.  
 R. Hall, *From Galileo to Newton*.  
 Christopher Hill, *A Century of Revolutions*.  
 Rodney Hilton, *Transition from Feudalism to Capitalism*.  
 H. G. Koenigsberger and G. L. Mosse, *Europe in the Sixteenth Century*.  
 Stephen J. Lee, *Aspects of European History, 1494 - 1789*.  
 G. Parker, *Europe in Crisis. 1598- 1648*.  
 G. Parker and L. M. Smith, *General Crisis of the Seventeenth Century*.  
 J. H. Parry, *The Age of Reconnaissance*.  
 Meenaxi Phukan, *Rise of the Modern West: Social and Economic History of Early Modern Europe*.  
 V. Polienskiy, *War and Society in Europe, 1618 - 48*.  
 Theodore K. Rabb, *The Struggle for Stability in Early Modern Europe*.  
 V. Scammell, *The First Imperial Age: European Overseas Expansion, 1400 - 1715*.  
 Jan de Vries, *Economy of Europe in an Age of Crisis 1600 to 1750*

### **SUGGESTED READINGS**

M. S. Anderson, *Europe in the Eighteenth Century*.  
 Perry Anderson, *The Lineages of the Absolutist State*.  
 Stuart Andrews, *Eighteenth Century Europe*.  
 B. H. Slicher von Bath, *The Agrarian History of Western Europe. AD. 500 - 1850*.  
 The Cambridge Economic History of Europe. Vol. I - VI.  
 James B. Collins, *The State in Early Modern France: New Approaches to European History*.  
 G. R. Elton, *Reformation Europe, 1517 - 1559*.  
 M. P. Gilmore, *The World of Humanism. 1453 -1517*.  
 Peter Kriedte, *Peasants, Landlords and Merchant Capitalists*.  
 J. Lynch, *Spain under the Hapsburgs*.  
 Peter Mathias, *First Industrial revolution*.  
 Harry Miskimin, *The Economy of Later Renaissance Europe: 1460 -1600*.  
 Charles A. Nauert, *Humanism and the Culture of the Renaissance (1996)*.  
 The New Cambridge Modern History of Europe, Vols. I -VII.  
 L. W. Owie, *Seventeenth Century Europe*.  
 D. H. Pennington, *Seventeenth Century Europe*.  
 F. Rice, *The Foundations of Early Modern Europe*.

### **HSC 3.3 : History of North East India (1822-1972)**

1. Early British conquest and expansion:
  - (a) Early British policy
  - (b) First Anglo- Burmese War and the Treaty of Yandaboo
  - (c) Annexations of Assam, Cachar, Jaintia.
  
2. **Consolidation of British Rule:**
  - (a) Khasi, Garo, Mizo Hills
  - (b) British relations with Arunachal tribes, Manipur and Tripura States.
  
3. **Economic and Social changes under British rule:**
  - (a) Land Revenue
  - (b) Plantation industry

- (c) Transport and Communication
- (d) Western Education.

**4. Impact of Nationalist Movement in Assam:**

- (a) Partition of Bengal
- (b) Assam Association
- (c) Non- Cooperation Movement; Civil Disobedience Movement and Quit India Movement.

**5. Political Developments since Independence:**

- (a) Integration of Manipur, Meghalaya and Tripura into the Indian Union
- (b) The Sixth Schedule
- (c) Reorganization of North Eastern States 1972.

**ESSENTIAL READINGS**

- H. K. Barpujari, Assam in the Days of the Company
- J. B. Bhattacharjee, The Garos and the English
- A. Guha, Planter Raj to Swaraj 1826-1947
- H. K. Barpujari, The Comprehensive History of Assam, Vol. IV and V
- H. K. Barpujari, A. Bhuyan, S. P. Dey, Political History of Assam, Vol. I-III
- R. M. Lahiri, Annexation of Assam
- S. K. Bhuyan, Anglo-Assamese Relations
- S. K. Chaube, Hill Politics in North-East India
- D. R. Syiemlieh, British Administration in Meghalaya, Policy and Pattern
- E. Gait, History of Assam
- Arun Bhuyan- Nationalist Upsurge in Assam
- H. K. Barpujari, Problem of the Hill Tribes: North East India, Vol. I-III
- A. K. Agarwal, North Eastern Economy, Problems and Prospects
- Priyam Goswami- The History of Assam, From Yandaboo to Partition.

**HSC 4.1 : HISTORY OF INDIA IV (1206 - 1707)**

**I. Delhi Sultanate:**

- (a) Sources
- (b) Expansion and consolidation under the Khilji, Tughluq and Lodi dynasty.

**II. Society and Economy under the Sultanate:**

- (a) Iqta and the revenue free grants
- (b) Agricultural production, monetization, market regulations, growth of urban centres, trade and commerce
- (c) Rural society.

**III. Mughal Empire:**

- (a) Sources
- (b) Expansion and consolidation (1526-1707)

**IV. Mughal Polity and Economy:**

- (a) Sher Shah's administration and revenue reforms
- (b) Mansabdari
- (c) Jagirdari
- (d) Agrarian reforms

## **V. Religion and Culture:**

- (a) Bhakti and Sufi movements; Sikhism
- (b) Sulh-i-Kul
- (c) Art and architecture
- (d) Literary developments

## **ESSENTIAL READINGS**

Mohammad Habib and K.A. Nizami, eds, Comprehensive History of India, Vol. V, The Delhi Sultanate.  
Satish Chandra, Medieval India I and II.  
Peter Jackson, The Delhi Sultanate.  
Catherine Asher and Cynthia Talbot, India Before Europe.  
Tapan Raychaudhuri and Irfan Habib, eds, Cambridge Economic History of India, Vol. I.  
K.A. Nizami, Religion and Politics in the Thirteenth Century.  
W.H. McLeod, Karine Schomer, et al, Eds, The Sants.  
S.A.A. Rizvi, A History of Sufism in India, Vol. I.  
Mohibul Hasan, Historians of Medieval India.  
Alam. Mand S. Subrahmanyam, The Mughal State 1526- 1750s  
Ali, Athar, Mughal India, Studies in Polity, Ideas, Society and Culture.  
Bhargava M. ed Exploring Medieval India, Vol I and II.  
Eaton, Richard, ed. India's Islaamic Traditions.  
Koch, Ebba. Mughal Art and Imperial Ideology  
Nizami K.A. On History and Historians of Medieval India.  
Khan, I. A. Gunpowder and Firearms: Warfare in Medieval India.  
Chandra, Satish; Medieval India vol II

## **SUGGESTED READINGS**

Cynthia Talbot, Pre-colonial India in Practice.  
Simon Digby, War Horses and Elephants in the Delhi Sultanate.  
I.H. Siddiqui, Afghan Despotism.  
Burton Stein, New Cambridge History of India: Vijayanagara.  
Richard M. Eaton, ed., India's Islamic Traditions.  
Vijaya Ramaswamy, Walking Naked: Women, Society, and Spirituality in South India.  
Sheldon Pollock, Languages of the Gods in the World of Men.  
Pushpa Prasad, Sanskrit Inscriptions of the Delhi Sultanate.  
Andre Wink, Al-Hind, Vols. I-III.

## **HSC 4.2 : RISE OF THE MODERN WEST - II**

### **I. Geographical Discoveries:**

- (a) Spain, Portugal, England, France
- (b) Effects of geographical discoveries

### **II. 17<sup>th</sup> century European crisis:**

- (a) Economic Dimensions
- (b) Social Dimensions
- (c) Political Dimensions

### **iii. The Thirty Years War:**

- (a) Causes
- (b) Danish, Swedish and Bohemian Revolt
- (c) The Peace of Westphalia

#### **iv. The Era of Revolution:**

- (a) Industrial Revolution
- (b) Glorious Revolution
- (c) American War of Independence

#### **v. European Politics in the 18<sup>th</sup> Century:**

- (a) Parliamentary Monarchy
- (b) Patterns of absolutism in Europe

#### **ESSENTIAL READINGS**

- T.S. Aston and C.H.E. Philpin (eds.), *The Brenner Debate*.  
H. Butterfield, *The Origins of Modern Science*.  
Carlo M. Cipolla, *Fontana Economic History of Europe*, Vols. II and III.  
Carlo M. Cipolla, *Before the Industrial Revolution, European Society and Economy, 1000 -1700*. 3rd ed. (1993)  
D.C. Coleman (ed.), *Revisions in Mercantilism*.  
Ralph Davis, *The Rise of the Atlantic Economics*.  
Maurice Dobb, *Studies in the Development of Capitalism*.  
J.R. Hale, *Renaissance Europe*.  
R. Hall, *From Galileo to Newton*.  
Christopher Hill, *A Century of Revolutions*.  
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H.G. Koenigsberger and G.L. Mosse, *Europe in the Sixteenth Century*.  
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J.H. Parry, *The Age of Reconnaissance*.  
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Theodore K. Rabb, *The Struggle for Stability in Early Modern Europe*.  
V. Scammell, *The First Imperial Age: European Overseas Expansion, 1400-1715*.  
Jan de Vries, *Economy of Europe in an Age of Crisis 1600 û 1750*.

#### **SUGGESTED READINGS**

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Perry Anderson, *The Lineages of the Absolutist state*  
Stuart Andrews, *Eighteenth Century Europe*.  
B. H. Slicher von Bath, *The Agrarian History of Western Europe. AD. 500 - 1850*.  
*The Cambridge Economic History of Europe. Vol. I - VI*.  
James B. Collins, *The State in Early Modern France, New Approaches to European History*.  
G. R. Elton, *Reformation Europe, 1517 - 1559*.  
M. P. Gilmore, *The World of Humanism. 1453 -1517*.  
Peter Kriedte, *Peasants, Landlords and Merchant Capitalists*.  
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Peter Mathias, *First Industrial revolution*.  
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*The New Cambridge Modern History of Europe, Vols. I - VII*.  
L. W. Owie, *Seventeenth Century Europe*.  
D. H. Pennington, *Seventeenth Century Europe*.  
F. Rice, *The Foundations of Early Modern Europe*

### HSC 4.3: Political History of the Nagas

#### 1. Pre-Colonial Naga Polity:

- (a) Pre-colonial Naga Village Chief-powers and functions
- (b) Village Council- Function of the Village Council- the Executive, Administrative, Judicial
- (c) Law of Inheritance.

#### 2. Early British Contact and Annexation:

- (a) Early British contact with the Nagas
- (b) Treaty of Yandaboo (1826)
- (c) First Stage of Annexation
- (d) Second Stage of Annexation.

#### 3. Consolidation of the British rule:

- (a) The Colonial Administrative Policy
- (b) Transformation of Naga Political system- Gaonbura, Dobashi, District Officers

#### 4. Emergence of Naga Nationalism:

- (a) Nagas in the First World War
- (b) Formation of Naga Club (1918) and Simon Commission
- (c) Formation of the NNC
- (d) Akbar Hydari Agreement.

#### 5. Political Developments Since Independence:

- (a) Naga Resistance Movement (1951 to 1953)
- (b) Formation of Federal Government
- (c) Naga People's Convention
- (d) Emergence of Nagaland State.

### ESSENTIAL READING

- N. Venuh, British Colonization and Restructuring Naga Polity  
S. K. Chaube, Hill Polity in North East India  
A. Mackenzie, The North East Frontier of India  
Verrier Elwin, The Nagas in the Nineteenth Century  
M. Horam, Naga Polity  
Yuno Yusoso, Rising Naga  
H. K. Barpujari, Problem of the Hill Tribes; North East India, Vol. II  
M. Alemchiba, A Brief Historical Account of Nagaland

### HSC 5.1: HISTORY OF INDIA V (1707-1857)

#### I. Transitions in the 18<sup>th</sup> Century:

- (a) Disintegration of the Mughal Empire
- (b) Emergence of the regional powers
- (c) Foundation of the British Empire- Battle of Plassey (1757) and Buxar (1764)

#### II. Expansion and consolidation of colonial power:

- (a) Robert Clive
- (b) Warren Hastings
- (c) Cornwallis
- (d) Wellesley
- (e) Dalhousie

### III. Rural society and Economy:

- (a) Land Revenue systems and its impact
- (b) Commercialization of agriculture
- (c) Rural indebtedness.

### IV. Trade and industry:

- (a) De-industrialization
- (b) Drain of wealth
- (c) Beginning of modern industry,
- (d) Foreign trade
- (e) Mercantilism

### V. Popular resistance:

- (a) Kol Uprising
- (b) Santhal uprising
- (c) Indigo Revolt
- (d) Revolt of 1857

### ESSENTIAL READINGS

- C. A. Bayly, Indian Society and the Making of the British Empire, New Cambridge History of India.
- Bipan Chandra, Rise and Growth of Economic Nationalism in India.
- Suhash Chakravarty, The Raj Syndrome: A Study in Imperial Perceptions, 1989.
- J.S. Grewal, The Sikhs of the Punjab, New Cambridge History of India
- Ranajit Guha, ed., A Subaltern Studies Reader.
- Dharma Kumar and Tapan Raychaudhuri, eds., The Cambridge Economic History of India, Vol. II.
- P.J. Marshall, Bengal: The British Bridgehead, New Cambridge History of India.
- R.C. Majumdar, ed., History and Culture of Indian People, Vols. IX and X, British Paramountcy and Indian Renaissance.
- Rajat K. Ray, ed., Entrepreneurship and Industry in India, 1800-1947, Oxford In India Readings.
- Eric Stokes, English Utilitarians and India.

### SUGGESTED READINGS

- David Arnold and Ramchandra Guha, eds, Nature, Culture and Imperialism.
- Amiya Bagchi, Private Investment in India.
- Bipan Chandra, K.N. Panikkar, Mridula Mukherjee, Sucheta Mahajan and Aditya Mukherjee, India's Struggles for Independence.
- A.R. Desai, Peasant Struggles in India.
- R.P. Dutt, India today.
- M.J. Fisher, ed., Politics of Annexation (Oxford in India Readings).
- Ranajit Guha, Elementary Aspects of Peasant Insurgency in Colonial India (1983).
- P.C. Joshi, Rebellion 1857: A Symposium.
- J.Krishnamurti, Women in Colonial India.
- Dadabhai Naroji, Poverty and Un-British Rule in India.

### HSC 5.2: History of Modern Europe- I

#### I. The French Revolution and its European repercussions:

- [a] Crisis of Ancient Regime
- [b] Intellectual currents.
- [c] Phases of the French Revolution 1789 - 99.
- [d] Impact of the French Revolution

## **II. Napoleonic Era and other Revolutions:**

- [a] Early life and rise of Napoleon
- [b] Reforms of Napoleon
- [c] Battle of Waterloo and his gradual downfall
- [d] Revolutionary and Radical movements, 1830 - 1848.

## **III. The Age of Metternich and the following years**

- [a] Life of Metternich
- [b] Congress of Vienna
- [c] Concert of Europe
- [d] Eastern Questions: Greek war of independence, Crimean war, Russo-Turkish war

## **IV. Varieties of Nationalism and the Remaking of States in the 19th and 20th Centuries.**

- [a] Unification of Italy
- [b] Unification of Germany
- [c] Formation of alliances and the path to WWI

## **V. World War I and The Aftermath**

- [a] Causes for the WWI
- [b] Result and Impact
- [c] Treaty of Versailles
- [d] Woodrow Wilson's 14 points
- [e] League of Nations

## **ESSENTIAL READINGS**

- Gerald Brennan: *The Spanish Labyrinth: An Account of the Social and Political Background of the Civil War.*
- C.M. Cipolla: *Fontana Economic History of Europe, Volume III: The Industrial Revolution.*
- Norman Davies, *Europe.*
- J. Evans: *The Foundations of a Modern State in 19th Century Europe.*
- T.S. Hamerow: *Restoration, Revolution and Reaction: Economics and Politics in Germany [1815 - 1871].*
- E.J. Hobsbawm: *The Age of Revolution.*
- Lynn Hunt: *Politics, Culture and Class in the French Revolution.*
- James Joll, *Europe Since 1870.*
- David Landes: *Prometheus Unbound.*
- George Lefebvre, *Coming of the French Revolution.*
- George Lichtheim : *A Short History of Socialism.*
- Peter Mathias, *First Industrial Revolution.*
- Alec Nove: *An Economic History of the USSR.*
- Andrew Porter, *European Imperialism, 18760 - 1914 (1994).*
- Anthony Wood, *History of Europe, 1815 - 1960 (1983).*
- Stuart Woolf: *History of Italy, 1700 - 1860.*

## **SUGGESTED READINGS**

- G. Barrowclough, *An Introduction to Contemporary History.*
- Maurice Dobb: *Soviet Economic Development Since 1917.*
- M. Perrot and G. Duby [eds.]: *A History of Women in the West, Volumes 4 and 5.*
- H.J. Hanham; *Nineteenth Century Constitution, 1815 - 1914.*
- E.J. Hobsbawm, *Nations and Nationalism.*
- Charles and Barbara Jelavich: *Establishment of the Balkan National States, 1840 - 1920.*
- James Joll, *Origins of the First World war (1989).*
- Jaon B. Landes: *Women and the Public Sphere in the Age of the French Revolution.*



David Lowenthal, *The Past is a Foreign Country*.  
 Colin Lucas: *The French Revolution and the Making of Modern Political Culture*  
 Nicholas Mansergh: *The Irish Question, 1840 - 1921*.  
 K.O. Morgan: *Oxford Illustrated History of Britain, Volume 3 [1789 - 1983]*.  
 R.P. Morgan: *German Social Democracy and the First International*.  
 N.V. Riasanovsky: *A History of Russia*.  
 J.M. Robert, *Europe 1880 - 1985*.  
 J.J. Roth (ed.), *World War I : A Turning Point in Modern History*.  
 Albert Soboul: *History of the French Revolution (in two volumes)*.  
 Lawrence Stone, *History and the Social Sciences in the Twentieth Century The Past and the Present (1981)*.  
 Dorothy Thompson: *Chartists: Popular Politics in the Industrial Revolution*.  
 E.P. Thompson: *Making of the English Working Class*.  
 Michel Vovelle, *Fall of the French Monarchy (1984)*.  
 H. Seton Watson: *The Russian Empire*.  
 Raymond Williams: *Culture and Society*.

## **HSC 6.1: HISTORY OF INDIA VI (1857 - 1950)**

### **I. Social and cultural changes:**

- (a) Growth of press and education
- (b) Socio-religious movements-Brahmo-Samaj, Ramakrishna Mission, Arya Samaj, Aligarh Movement

### **II. Emergence of Indian Nationalism:**

- (a) Emergence of Indian Nationalism
- (b) Foundation of INC- Moderates and Extremists
- (c) Partition of Bengal and Swadeshi movement
- (d) Rise of revolutionaries
- (e) Home Rule Movement.

### **III. The Age of Gandhian Politics:**

- (a) Rise of Mohandas Karamchand Gandhi
- (b) Khilafat and Non- Cooperation Movement
- (c) Civil Disobedience Movement
- (d) Quit India Movement

### **IV. Nationalism and social groups:**

- (a) Working class
- (b) Women's participation
- (c) Peasants,
- (d) Dalits,
- (e) Intelligentsia

### **V. Independence and Partition:**

- (a) INA
- (b) Communalism and Partition of India
- (c) Transfer of power
- (d) Integration of Indian states
- (e) Making of the Indian constitution.

## **ESSENTIAL READINGS**

Judith Brown, *Gandhi's rise to Power, 1915-22*.  
 Paul Brass, *The Politics of India Since Independence*, OUP, 1990.  
 Bipan Chandra, *Nationalism and Colonialism in Modern India*, 1979.  
 Bipan Chandra, *Rise and Growth of Economic Nationalism in India*.  
 Mohandas K. Gandhi, *An Autobiography or The Story of My Experiments with Truth*.

Ranajit Guha, ed., A Subaltern Studies Reader.  
 Peter Hardy, Muslims of British India.  
 Mushirul Hasan, ed., India's Partition, Oxford in India Readings.  
 D.A. Low, ed., Congress and the Raj.  
 John R. McLane, Indian Nationalism and the Early Congress.  
 Jawaharlal Nehru, An Autobiography.  
 Gyanendra Pandey, The Construction of Communalism in colonial north India.  
 Sumit Sarkar, Modern India, 1885-1947.  
 Anil Seal, Emergence of Indian Nationalism.  
 Ram Lakhan Shukla (ed.), Adhunik Bharat ka Itihas.  
 Eleanor Zelliot, From Untouchable to Dalit: Essays on the Ambedkar Movement.

## **SUGGESTED READINGS**

Judith Brown, Gandhi: (et al) A Prisoner of Hope.  
 Bipan Chandra, Communalism in Modern India, 2nd ed., 1987.  
 Bipan Chandra, K.N. Panikkar, Mridula Mukherjee, Sucheta Mahajan and Aditya Mukherjee, India's, Struggles for Independence.  
 A.R. Desai, Social Background of Indian Nationalism.  
 A.R. Desai, Peasant Struggles in India.  
 Francine Frankel, India's Political Economy, 1947-77.  
 Ranajit Guha, and G.C. Spivak, eds. Select Subaltern Studies.  
 Charles Heimsath, Indian Nationalism and Hindu Social Reform.  
 F. Hutchins, Illusion of Permanence.  
 F. Hutchins, Spontaneous Revolution.  
 V.C. Joshi (ed.), Rammohan Roy and the process of Modernization in India.  
 J.Krishnamurti, Women in Colonial India.

## **HSC 6.2 : HISTORY OF MODERN EUROPE II**

### **I. The Crisis of Feudalism in Russia and Experiments in Socialism:**

- [a] Problems of feudalism in Russia
- [b] Russo-Japanese war 1905
- [c] The Mensheviks and the Bolsheviks

### **II. Imperialism, War, and Crisis:**

- [a] Imperialism and growth of Militarism; Power blocks and alliances
- [b] Expansion of European empires
- [c] The post 1919 World Order: economic crises, the Great Depression and Recovery.

### **III. The path towards WWII**

- [a] The Treaties of Versailles: a case study
- [b] Failure of the League of Nations
- [c] Benito Mussolini and the rise of Fascism in Italy
- [d] Adolf Hitler and the Rise of Nazism in Germany

### **IV. The World War II**

- (a) Causes of the War
- [b] Results of the World War II
- [c] Peace Settlements

### **V. Europe Since 1945**

- [a] The United Nations

- [b] The Cold War
- [c] NATO and The Warsaw Pact
- [d] NAM (Non-Aligned Movement)

## ESSENTIAL READINGS

Gerald Brennan: The Spanish Labyrinth: An Account of the Social and Political Background of the Civil War  
 C.M. Cipolla: Fontana Economic History of Europe, Volume II the Present (1981).  
 Norman Davies, Europe.  
 J. Evans: The Foundations of a Modern State in 19th Century Europe.  
 T.S. Hamerow: Restoration, Revolution and Reaction: Economics and Politics in Germany [1815 - 1871].  
 E.J. Hobsbawm : The Age of Revolution.  
 Lynn Hunt: Politics, Culture and Class in the French Revolution.  
 James Joll, Europe Since 1870.  
 David Landes: Prometheus Unbound.  
 George Lefebvre, Coming of the French Revolution.  
 George Lichtheim: A Short History of Socialism.  
 Peter Mathias, First Industrial Revolution.  
 Alec Nove: An Economic History of the USSR.  
 Andrew Porter, European Imperialism, 18760 -1914 (1994).  
 Antony Wood, History of Europe, 1815 û 1960 (1983).  
 Stuart Woolf: History of Italy, 1700 û 1860.

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 Maurice Dobb: Soviet Economic Development Since 1917.  
 M. Perrot and G. Duby [eds.]: A History of Women in the West, Volumes 4 and 5.  
 H.J. Hanham; Nineteenth Century Constitution, 1815 û 1914.  
 E.J. Hobsbawm, Nations and Nationalism.  
 Charles and Barbara Jelavich: Establishment of the Balkan National States, 1840 û 1920.  
 James Joll, Origins of the First World war (1989).  
 Jaon B. Landes: Women and the Public Sphere in the Age of the French Revolution.  
 David lowenthal, The Past is a Foreign Country.  
 Colin Licas: The French Revolution and the Making of Modern Political Culture, Volume 2.  
 Nicholas Mansergh: The Irish Question, 1840 - 1921.  
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 R.P. Morgan: German Social Democracy and the First International.  
 N.V. Riasanovsky: A History of Russia.  
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 Lawrence Stone, History and the Social Sciences in the Twentieth Century, The Past and the Present (1981).  
 Dorothy Thompson: Chartists: Popular Politics in the Industrial Revolution.  
 E.P. Thompson: Making of the English Working Class.  
 Michel Vovelle, fall of the French Monarchy (1984).  
 H. Seton Watson: The Russian Empire.

**Skilled Enhancement Courses (SEC)**  
**Any Two Papers, Credits,-2 each, 2 Classes**

**HSS 3.4: Understanding Heritage**

This course will enable students to understand the different facets of heritage and their significance. It highlights the legal and institutional frameworks for heritage protection in India as also the challenges facing it. The implications of the rapidly changing interface between heritage and history will also be examined. The course will be strongly project-based and will require visits to sites and monuments. At least two Projects will be based on visits to Museums/Heritage Sites.

**I. Defining Heritage:**

Meaning of 'antiquity', 'archaeological site', 'tangible heritage', 'intangible heritage' and 'art treasure'

**II. Challenges facing Tangible and Intangible Heritage:**

Development, antiquity smuggling, conflict (to be examined through specific case studies)

**III. Heritage and Travel:**

Viewing Heritage Sites, The relationship between cultural heritage, landscape and recent travel trends

**ESSENTIAL READINGS**

David Lowenthal, *Possessed By The Past: The Heritage Crusade and The Spoils of History*, Cambridge, 2010

Layton, R. P. Stone and J. Thomas. *Destruction and Conservation of Cultural Property*. London: Rutledge, 2001

Lahiri, N. *Marshaling the Past - Ancient India and its Modern Histories*. Ranikhet: Permanent Black. 2012, Chapters 4 and 5.

S.S. Biswas, *Protecting the Cultural Heritage (National Legislations and International Conventions)*. New Delhi: INTACH, 1999.

**SUGGESTED READINGS**

Acts, Charters and Conventions are available on the UNESCO and ASI websites ([www.unesco.org](http://www.unesco.org); [www.asi.nic.in](http://www.asi.nic.in))

Agrawal, O.P., *Essentials of Conservation and Museology*, Delhi, 2006 Chainani, S. 2007. *Heritage and Environment*. Mumbai: Urban Design Research Institute, 2007.

**HSS 4.4: Archives and Museums**

This course introduces students to the institutions that house and maintain documentary, visual and material remains of the past. Museums and archives are among the most important such repositories and this course explains their significance and how they work. Students will be encouraged to undertake collection, documentation and exhibition of such materials in their localities and colleges. Visit to National Archives and National Museum are an integral part of the course.

**I. Definition and history of Archives and museums (with special reference to India)**

**II. Types of archives and museums:** Understanding the traditions of preservation in India, Collection policies, ethics and procedures Collection: field exploration, excavation, Documentation: accessioning, indexing, cataloguing, digital documentation and de-accessioning Preservation: curatorial care, preventive conservation, chemical preservation and restoration

**III. Museum Presentation and Exhibition**

## ESSENTIAL READINGS

Saloni Mathur, *India By Design: Colonial History and Cultural Display*, University of California, 2007  
Sengupta, S. *Experiencing History Through Archives*. Delhi: Munshiram Manoharlal. 2004. Guha, Thakurta, Tapati, *Monuments, Objects, Histories: Institution of Art in Colonial India*, New York, 2004.  
Kathalia, Y. P, *Conservation and Restoration of Archive Materials*, UNESCO, 1973  
Choudhary, R.D. *Museums of India and their maladies*. Calcutta: Agam Kala. 1988. Nair, S.M, *Bio-Deterioration of Museum Materials*. 2011  
Agrawal, O.P., *Essentials of Conservation and Museology*, Delhi.

## **Discipline Specific Elective** **Any Four paper      Credit : 6 each**

### **HSD 5.3: HISTORY OF THE UNITED STATES OF AMERICA I**

#### **I. The Background:**

- [a] The land and indigenous people
- [b] Settlement and colonization by Europeans
- [c] Early colonial society and polity

#### **II. Making of the Republic:**

- [a] American War of Independence (Causes and Results)
- [b] Philadelphia Convention
- [c] Processes and Features of Constitution making: Debates, Federalists and Anti-Federalists
- [d] Making of the constitution

#### **III. Evolution of American Democracy:**

- [a] Jacksonian Democracy
- [b] Manifest Destiny
- [c] War of 1812
- [d] Mexican American War
- [e] Monroe Doctrine

#### **IV. Civil War:**

- [a] The Election of 1860
- [b] Abraham Lincoln
- [c] Problems of the south and its gradual journey towards the formation of the confederacy
- [d] The civil war and its impact
- [e] The reconstruction Programmes

#### **V. Economy of the U.S.A. after the civil War**

- [a] Industrial revolution in America
- [b] The rise of big businesses in America (motor industry, oil industry, steel industry, railroad industry)
- [c] Populist movement and agrarian reforms
- [d] Society during the industrial era in America

## ESSENTIAL READINGS

Bernard Bailyn, *The Great Republic*.  
Bernard Bailyn, *The Ideological Origins of the American Revolution*.  
Charles Beard, *An Economic Interpretation of the American Constitution*.  
Dee Brown, *Bury My Heart at Wounded Knee, An Indian History of the American West*.

Peter Carroll and David Noble, *Free and Unfree: A New History of the United States*.  
 David B. Davis, *The Problem of Slavery in the Age of Revolution*  
 U. Faulkner, *American Economic History*.  
 Robert Fogel, *Railroads and American Economic Growth*.  
 Eric Foner, *America's Black Past*.  
 John Hope Franklin, *From Slavery to Freedom*.  
 Gerald N. Grobb and George A. Billias, *Interpretations of American History: Patterns and Perspectives*, 2 Vols.  
 Richard Hofstadter, *The Age of Reform, From Bryan to FDR*  
 Linda Kerber, *Women's America: Refocusing the Past*.  
 David M. Potter, *The Impending Crisis*.  
 W. Pratt, *A History of the United States Foreign Policy*.  
 James Randail, *The Civil War and Reconstruction*.  
 J. G. Randall and David Donald, *The Civil War and Reconstruction*.  
 Kenneth Stamp, *The Peculiar Institution, Slavery in the Ante-bellum South*.  
 Frederick Jackson Turner, *The Frontier in American History*.  
 Robert Wiebe, *The Search for Order*.

## SUGGESTED READINGS

Lee Benson, *The Concept of Jackson Democracy*.  
 Ray A. Billington, *Westward Expansion*.  
 Paul Boyer, Harvard Sitkoff, Nancy Woloch, *The Enduring Vision: A History of the American People*, Vols. Land 2.  
 Thomas Cochran, *The Inner Revolution*.  
 A. O. Craven, *The Growth of Southern Nationalism, 1848 - 1861*.  
 Lance E. Davis (ed.), *American Economic Growth*.  
 Carl N. Degler, *At Odds: Women and Family in America from the Revolution to the Present*.  
 Lewis L. Gould (ed.), *The Progressive Era*.  
 John D. Hicks, *The Federal Union: A History of USA Since 1865*.  
 R.P. Kaushik, *Significant Themes in American History*.  
 David M. Kennedy, Thomas Bailey and Mel Piehl, *The Brief American Pageant*.  
 Irving Kristol, Gordon Wood and others, *America's Continuing Revolution*.  
 Richard W. Leopold, *The Growth of American Foreign Policy*.  
 Perry Miller, *From Colony to Province*.  
 Gary Nash (ed.), *Retracing the Past*.  
 Henry Pelling, *American Labor*.  
 Edward Pessen, *Jacksonian Panorama*.  
 Charles Sellers, Henry May and Neil McMillen, *A Synopsis of American History*; 2 Vols.  
 Donald Shiham, *The Making of American History: The Emergence of the Nation*, Vols. II & I.  
 Dwijendra Tripathi and S.C. Tiwari, *Themes and Perspectives in American History*.  
 James Weinstein, *The Corporate Ideal in the Liberal state*.

### HSD 5.4: History Of East Asia- I (1840-1919)

#### I. China during the 19th century:

Chinese feudalism: Gentry, bureaucracy and peasantry; the Confucian value system; Sino-centrism; the Canton commercial system.

#### II. European Expansion:

The transformation of China into an informal colony; the Opium Wars; the Unequal Treaties; the scramble for concessions; Finance Imperialism; the Open Door policy.

### **III. China's response/ Agrarian and Popular Movements:**

Taiping and Boxer Rebellion. Attempts at Self-Strengthening (Tzu-chiang): Reforms of 1860-95; 1898; and 1901-08.

### **IV. Birth of Chinese Republic:**

- a) The Revolution of 1911: Causes, nature and significance; the social composition of the Revolution; Sun Yat-sen and his contribution; the formation of the Republic; Yuan Shih Kai; Warlordism.
- (b) May Fourth Movement of 1919: Nature and significance

### **V. Emergence of Nationalism:**

- (i) Nationalism & Communism in China (1921-1937)
  - (a) Formation of CCP; and the Guomintang (National Party of KMT)
  - (b) The First United Front
- (ii) The Communist Movement (1938-1949)
  - (a) The Jiangxi Period and the rise of Mao Tse Tung

### **ESSENTIAL READINGS**

George Allen, A Short Economic History of Japan.  
Jean Chesneaux, et al, China from Opium War to 1911 Revolution.  
Jean Chesneaux, et al, China from the 1911 Revolution to Liberation.  
Tan Chung, Triton and Dragon: Studies on the Nineteenth Century China and Imperialisms.  
John K. Fairbank, et al., and East Asia: Modern Transformation  
Y. Immanuel Hsu, The Rise of Modern China.  
Chalmers A Johnson, Peasant Nationalism and Communist Power: The Emergence of Red China, 1937 - 1945.  
Nathaniel Peffer, The Far East: A Modern History.  
Victor Purcell, The Boxer Uprising: A Background Study.  
Kenneth B. Pyle, The Making of Modern Japan.  
Franz Schuramann and Orville Schell (eds.), China Readings, 2 Volumes (Imperial China, and Republican China).  
Benjamin I. Schwartz, Mao and the Rise of Chinese Communism.  
Hu Sheng, Imperialism and Chinese Politics  
Chow Tse tung, The May Fourth Movement: Intellectual Revolution in Modern, China.  
Mao Tse tung's Selected Writings, National Book Agency, Calcutta.  
Mary C. Wright, China in Revolution: The First Phase, 1900 -1913.

### **SUGGESTED READINGS**

George M. Beckmann, Modernization of China and Japan.  
George M. Beckmann, The Making of the Meiji Constitution.  
Lucien Bianco, Origins of the Chinese Revolution, 1915 -1949.  
Jean Chesneaux, Peasant Revolts in China, 1840 û 1949.  
Tan Chung, China and the Brave New World: A Study of the Origins of the Opium War, 1840 û 42.  
Wolfgang Franke, A Century of Chinese Revolution.  
John W. Hall, Japan From Prehistory to Modern Times.  
History of Modern China Series: The Opium War, The Taiping Revolution, The Reform Movement (1898).  
M.B. Jansen, Japan and China: From War to Peace, 1894 û 1972.  
Franz Michael, The Taiping Rebellion.  
Harold Z. Schifrin, Sun Yat-Sen and the Origin of the Chinese Revolution.  
Ssu Yu-teng and John K. Fairbank, China's Response to the West.  
The Yi Ho Tuan Movement, The Revolution of 1911 (all published by Foreign Language Press, Beijing).

## **HSD 6.3: HISTORY OF THE UNITED STATES OF AMERICA II**

### **I. America In the post civil War period**

- [a] Popular trends in America Post Civil war: Carpetbaggers; Scalawags, transformation of the Blacks society, white supremacy Movement: Ku Klux Klan.
- [b] The role of Press and media in the development of America as a nation

### **II. USA Imperialism**

- [a] Spanish American war
- [b] USA and China
- [c] USA and Philippines
- [d] Dollar diplomacy

### **III. American and WWI**

- [a] America's entry and its impact on the WWI
- [b] Woodrow Wilson's 14 points
- [c] The Great Depression of 1929
- [d] New Deal

### **IV. America and WWII**

- [a] Policy of Isolationism
- [b] Entry into WWII and its impact
- [c] Cold War Era
- [d] Emergence of USA as World Super Power

### **V. Popular social Movements in America:**

- [a] Policies towards the Blacks
- [b] Martin Luther King Jr. and the Civil Rights Movement
- [c] Women's Rights Movement: Lowell Factory System, Women's Suffrage
- [d] Religious Movements; Puritans, Quakers and Mormons

## **ESSENTIAL READINGS**

- Charles Sellers, A Synopsis of American History, Vol. 1 and 2, Macmillan India, 1990
- Standley L Gallman (ed), The Cambridge Economic History of the USA, Cambridge, 1996
- Louis M Hacker, The Course of American Economic Growth and Development, Wiley Eastern, Ltd, New Delhi, 1971
- Michael Kraus, History of United States Till 1865, Surjeet Publications, Delhi, 1989
- H. B. Parkes, The United States of America: A history, Khosla Publishing House (Indian Reprint), Delhi, 1986
- Rhea Foster, The United States Since 1865, Surjeet Publications, Indian Reprint, Delhi, 1989
- John Hope Franklin, From Slavery To Freedom, New York, 1974
- H. U. Faulkner, Social and Cultural History Of USA, New Delhi, 1996
- N. Subramaniam, "History Of USA"
- Carnes, M.C. and J.A. Garraty. "The American Nation, A history Of the United States"
- Matthews, G, The Rise of Public Woman, Women's Power and Women's Place in the United States, 1630-1970, New York, Oxford University Press, 1996



## **HSD 6.4: History of Modern East Asia II (1868-1945)**

### **Japan (1868-1945)**

#### **(i) Transition from feudalism to capitalism:**

- (a) Crisis of Tokugawa Bakufu system
- (b) Meiji Restoration :Its nature and Significance
- (c) Political Reorganization
- (d) Military Reforms
- (e) Social, cultural and educational reforms (bunmeikaika)
- (f) Financial reforms and educational development in the 'Meiji'era
- (g) Meiji Constitution

#### **(ii) Japanese Imperialism**

- (a) China
- (b) Manchuria
- (c) Korea

#### **(iii) Democracy and Militarism/Fascism**

- (a) Popular/People's Rights Movement
- (b) Nature of political parties
- (c) Rise of Militarism-Nature and significance
- (d) Russo-Japanese war
- (e) Second World War; American occupation
- (f) Post-War Changes

### **IV. Emergence of Modern Korea**

- (a) The old order and Institutional Decay: Joseon Korea
- (b) Korea's interactions with the western powers and Korea's unequal treaties with Japan
- (c) Attempts at social, political and economic reforms in Korea

### **V. Japan's colonization:**

- (a) March First Movement and the growth of Korean Nationalism;
- (b) In situational transformation 1910-1945
- (c) Post-War Changes

### **ESSENTIAL READINGS**

- George Allen, A Short Economic History of Japan.  
G. Beasley, The Modern History of Japan.  
John K. Fairbank, et al., East Asia: Modern Transformation  
Mikiso Hane, Modern Japan: A Historical Survey.  
Y. Immanuel Hsu, The Rise of Modern China.  
Jon Livingstone, et. al., The Japan Reader (Imperial Japan : 1800 û 1945), Vol. I  
E.H. Norman, Japan's Emergence as a Modern State.  
Nathaniel Peffer, The Far East: A Modern History.  
Kenneth B. Pyle, The Making of Modern Japan.  
Chow Tse Tung, The May Fourth Movement: Intellectual Revolution in Modern, China. 1913.  
Michael J. Seth, A concise history of Modern Korea, Rowman and Littlefield, 2009

### **SUGGESTED READINGS**

- Nathaniel Peffer, The Far East: A Modern History. Ann Arbor: University of Michigan Press, 1958.  
Bruce Cummings, Korea's place in the Sun: Modern History, W.W.Norton and Co., 1992  
Ramon H. Mayers and Mark R. Peattie(ed), The Japanese Colonial Empire, 1895-1945, Princeton: Princeton University Press, 1984

## Generic Elective

### HSG 1.4: History of India (From Earliest Times up to 300 CE)

#### I. Reconstructing Ancient Indian History:

- (a) Sources: Archaeological; Literary; Foreign Accounts
- (b) Prehistory: Palaeolithic, Mesolithic and Neolithic Cultures.

#### II. Harappan Civilization and Vedic Period:

- [a] Harappan Civilization: Dominant features & decline
- [b] The Vedic Period: Polity, Society, Economy and Religion

#### III. Cultures in Transition (c. 600 BCE to 300 CE):

- [a] The Rise of the Mahajanapadas; Magadha's Supremacy
- [b] Alexander's invasion
- [c] Mauryan state, administration, Ashoka's Dhamma, art and architecture
- (d) The Sangam Literature

#### IV. Rise of New Religions during the 6<sup>th</sup> Century BCE:

- [a] Jainism- Causes, Doctrines, Spread, Decline and Contributions
- [b] Buddhism- Causes, Doctrines, Spread, Decline and Contributions

#### V. Post-Mauryan Times:

- (a) Post Mauryan - Indo-Greeks, Sakas, Parthians, Kushanas; Satavahanas

#### ESSENTIAL READINGS

- Agrawal, D.P. The Archaeology of India  
Basham, A.L. The Wonder That was India  
Chakrabarti, D.K. Archaeology of Ancient Indian Cities  
Jaiswal, Suvira Caste: Origin, Function and Dimensions Subramanian, N. Sangam Polity  
Thapar, Romila, History of Early India  
Allchin, F.R. and B Origins of a Civilization: The Prehistory and Early Archaeology of South Asia  
Basham, A.L, The Wonder That was India  
Jha, D.N. Ancient India in Historical Outline (1998 edn.)  
Kosambi, D.D. Culture and Civilization of Ancient India  
Sastri, K.A.N. A History of South India  
R.S Sharma, India's Ancient Past  
Sharma, R.S. Aspects of Political Ideas and Institutions in Ancient India (1991 edn.)  
Thapar, Romila Ashoka and the Decline of the Mauryas (1997) edn  
Yazdani, G. Early History of Deccan Aspects of Political Ideas and Institutions in Ancient India (1991 edn.)

### HSG 2.4: History of India (C.300 to 1206)

#### I. The Rise & Growth of the Guptas:

- [a] Administration
- [b] Society and Economy
- [c] Art, Literature, Science & Technology.

**II. Towards the Early Medieval:**

- [a] Harsha
- [b] Pallavas
- [c] Western Chalukyas

**III. South India with reference to Imperial Cholas:**

- [a] Polity
- [b] Society
- [c] Economy
- [d] Culture

**IV. Evolution of Political structures:**

- [a] Rashtrakutas
- [b] Palas
- [c] Pratiharas.
- [d] Tripartite Struggle

**V. Struggle for power in Northern India:**

- [a] Emergence of Rajput states
- [b] Arab invasion of Sindh
- [c] Establishment of Sultanate

**REFERENCES:**

- R. S. Sharma: Indian Feudalism
- B. D. Chattopadhyaya: Making of Early Medieval India
- Derryl N. Maclean: Religion and Society in Arab Sindh
- K. M. Ashraf: Life and Conditions of the People of Hindustan
- M. Habib and K.A. Nizami: A Comprehensive History of India Vol.V
- Tapan Ray Chaudhary and Irfan Habib (ed.) : The Cambridge Economic History of India, Vol.I
- Peter Jackson: Delhi Sultanate: A Political and Military History
- Tara Chand: Influence of Islam on Indian Culture
- Satish Chandra: A History of Medieval India, 2 Volumes
- Percy Brown, Islamic Architecture

**HSG 3.5: History of India (1206 to 1707)**

**I. Delhi Sultanate:**

- [a] Foundation
- [b] Expansion & consolidation-1206-1526
- [c] Administrative and economic reforms of the Khiljis and the Tughluqs
- [d] Decline

**II. Provincial kingdoms:**

- [a] Vijayanagar and Bahamani Kingdom
- [b] Ahom
- [c] Bengal

**III. Bhakti & Sufi Movements:**

- [a] Origins
- [b] Doctrines
- [c] Spread
- [d] Impact.

#### **IV. Advent of the Mughals:**

- [a] Growth of Mughal Empire (1526-1556)
- [b] Expansion and consolidation (1556-1707)

#### **V. Mughal polity, economy and society:**

- [a] Mansabdari system
- [b] Jagirdari system
- [c] Sher Shah's Administration
- [d] Economy and society
- [e] Architecture

#### **REFERENCES**

Irfan Habib, The Agrarian System of Mughal India 1556-1707,  
Irfan Habib (ed.) : Madhya Kaleen Bharat, (in Hindi), 8 Volumes,  
M. Athar Ali: Mughal Nobility under Aurangzeb,  
Shireen Moosvi: The Economy of the Mughal Empire  
S.A.A.Rizvi: Muslim Revivalist Movements in Northern India during 16th and 17th Centuries  
R.P. Tripathi: The Rise and Fall of the Mughal Empire, 2 vol.  
I. H. Siddiqui: Some Aspects of Afghan Despotism  
Kesvan Veluthat: Political Structure of Early Medieval South India  
P.J. Marshall: The Eighteenth Century in Indian History.  
Stewart Gordon : The Marathas 1600-1818  
Percy Brown: Islamic Architecture

#### **HSG 4.5: History of India (1707-1950).**

##### **I. Transition in the 18<sup>th</sup> Century:**

- [a] Decline of the Mughal empire
- [b] Emergence of independent states
- [c] Establishment of colonial power- Battle of Plassey and Buxar

##### **II. National Movement:**

- [a] Revolt of 1857
- [b] INC- Moderates and Extremists
- [c] Gandhian Era (1919-1947)

##### **III. Colonial economy:**

- [a] Land revenue policies
- [b] De-industrialisation
- [c] Commercialization of agriculture
- [d] Drain of Wealth
- [e] Growth of modern industries

##### **IV. Social and Cultural Changes:**

- [a] Beginning of Modern education
- [b] Growth of press,
- [c] Socio-religious reform movements- Arya Samaj, Brahmo Samaj, Ramakrishna Mission, Aligarh Movement

##### **V. Towards Independence:**

- [a] INA
- [b] Genesis and growth of communalism

- [c] Partition of India
- [d] Making of the Indian constitution
- [e] Integration of the Indian states.

## REFERENCES

- Sugata Bose and Ayesha Jalal: Modern South Asia: History, Culture, Political Economy, New Delhi, 1998
- Sekhar Bandyopadhyay From Plassey to Partition
- Barbara D Metcalf and T.R. Metcalf A Concise History of India, Cambridge, 2002
- C.A. Bayly: An Illustrated History of Modern India 1600 - 1947, London 1990
- Sumit Sarkar Modern India 1885 ñ 1947, Mamillan, 1983
- A.R. Desai- Social background of Indian nationalism
- Sumit Sarkar- Modern India
- Bipan Chandra- nationalism and colonialism
- Bipan Chandra- India after Independence
- Bipan Chandra- India's struggle for Independence
- Thomas Metcalfe- Ideologies of the Raj
- R. P. Dutt- India Today

**ST. JOSEPH'S COLLEGE, JAKHAMA (AUTONOMOUS)**

**Syllabus**

**For B.A.**

**POLITICAL SCIENCE (H)**

**Under Choice Based Credit System**

## POLITICAL SCIENCE HONOURS

Semester	Core Course (C)	Ability Enhancement Course (A)	Skilled Enhancement Course (S)	Discipline Specific Elective (D)	Generic Elective(G)
<b>First</b>	PSC 1.1 Understanding Political Theory	EGA 1.3 English Communication			PSG 1.4 Constitutional Govt. and Democracy in India
	PSC 1.2 Constitutional Government & Democracy in India				
<b>Second</b>	PSC 2.1 Political Theory: Concepts and Debates	ESA 2.3 Environmental Studies			PSG 2.4 Political Theory: Concepts and Debates
	PSC 2.2 Political Process in India				
<b>Third</b>	PSC 3.1 Introduction to Comparative Government & Politics		PSS 3.4 Legislative Practices and Procedures		PSG 3.5 United Nations & Global Conflicts
	PSC 3.2 Perspectives on Public Administration				
	PSC 3.3 Perspectives on International Relations & World History				
<b>Fourth</b>	PSC 4.1 Political Processes & Institutions in Comparative Perspectives		PSS 4.4 Peace & Conflict Resolution		PSG 4.5 Public Policy & Administration in India
	PSC 4.2 Public Policy & Administration in India				
	PSC 4.3 Global Politics				
<b>Fifth</b>	PSC 5.1 Classical Political Philosophy			PSD 5.3 Development Process & Social Movements in Contemporary India	
	PSC 5.2 Indian Political Thought –I			PSD 5.4 India's Foreign Policy in a Globalizing World	
<b>Sixth</b>	PSC 6.1 Modern Political Philosophy			PSD 6.3 Understanding North East India	
	PSC 6.2 Indian Political Thought – II			PSD 6.4 Understanding South Asia	
<b>No. of Courses</b>	14 (84)	2 (4)	2 (4)	4 (24)	4(24)

**CHOICE BASED CREDIT SYSTEM**  
**B.A. POLITICAL SCIENCE**  
**LIST OF PAPERS AND COURSES**

**A) CORE COURSE (14)**

Paper I- Understanding Political Theory

Paper II- Constitutional Government and Democracy in India

Paper III – Political Theory-Concepts and Debates

Paper IV- Political Process in India

Paper V- Introduction to Comparative Government and Politics

Paper VI –Perspectives on Public Administration

Paper VII- Perspectives on International Relations and World History

Paper VIII- Political Processes and Institutions in Comparative Perspective

Paper IX- Public Policy and Administration in India

Paper X- Global Politics

Paper XI- Classical Political Philosophy

Paper XII- Indian Political Thought-I

Paper XIII- Modern Political Philosophy

Paper XIV- Indian Political Thought-II

**B) ABILITY ENHANCEMENT (COMPULSORY) (2)**

♦ ENGLISH/MIL Communication      ♦ ENVIRONMENTAL STUDIES

**C) SKILLED ENHANCEMENT COURSE (2)**

- 1) Legislative Practises and procedure
- 2) Conflict and Peace Building

**D) DISCIPLINE SPECIFIC ELECTIVE COURSE (4)**

- 1) Development Process & Social Movements in Contemporary India (6)
- 2) India's Foreign Policy in a Globalizing World (6)
- 3) Understanding North East India (6)
- 4) Understanding South Asia (6)

**E) GENERIC ELECTIVE (4)**

- 1) Nationalism in India (6)
- 2) Political Theory-Concepts and Debates (6)
- 3) United Nations & Global Conflicts (6)
- 4) Public Policy and Administration in India (6)



**CHOICE BASED CREDIT SYSTEM  
SYLLABI AND READING LIST  
BA (HONOURS) POLITICAL SCIENCE**

**A) CORE Course**

**I Semester**

**PSC 1.1: UNDERSTANDING POLITICAL THEORY**

Course Objective: This course is divided into two sections. Section A introduces the students to the idea of political theory, its history and approaches, and an assessment of its critical and contemporary trends. Section B is designed to reconcile political theory and practice through reflections on the ideas and practices related to democracy.

**I: Introducing Political Theory (30 Lectures)**

**Unit I: (12 Lectures)**

- a. Meaning, Nature and Scope of Political Theory
- b. Traditions of Political Theory: Liberal, Marxist, Anarchist and Conservative

**Unit II: (10 Lectures).**

Approaches to Political Theory: Traditional and Modern.

**Unit III: (8 Lectures)**

Critical and Contemporary Perspectives in Political Theory: Feminist and Postmodern

**II: Political Theory and Practice (30 Lectures) The Grammar of Democracy**

**Unit IV: (15 Lectures):**

Theories of Democracy: Western Liberal democracy, Elitists Theory of Democracy, Marxist.

**Unit V: (15 Lectures)**

- a. Deliberative Democracy
- b. Participation and Representation

**Essential Readings**

**I: Introducing Political Theory**

Bhargava, R. (2008) 'What is Political Theory', in Bhargava, R and Acharya, A. (eds.) Political Theory: An Introduction. New Delhi: Pearson Longman, pp. 2-16.

Bellamy, R. (1993) 'Introduction: The Demise and Rise of Political Theory', in Bellamy, R. (ed.) Theories and Concepts of Politics. New York: Manchester University Press, pp. 1-14.

Glaser, D. (1995) 'Normative Theory', in Marsh, D. and Stoker, G. (eds.) Theory and Methods in Political Science. London: Macmillan, pp. 21-40.

Sanders, D. (1995) 'Behavioral Analysis', in Marsh, D. and Stoker, G. (eds.) Theory and Methods in Political Science. London: Macmillan, pp. 58-75.

Chapman, J. (1995) 'The Feminist Perspective', in Marsh, D. and Stoker, G. (eds.) Theory and Methods in Political Science. London: Macmillan, pp. 94-114.

Bhargava, R. 'Why Do We Need Political Theory', in Bhargava, R. and Acharya, A. (eds.) Political Theory: An Introduction. New Delhi: Pearson Longman, pp. 17-36.

Bannett, J. (2004) 'Postmodern Approach to Political Theory', in Kukathas, Ch. and Gaus, G. F. (eds.) Handbook of Political Theory. New Delhi: Sage, pp. 46-54.

Vincent, A. (2004) The Nature of Political Theory. New York: Oxford University Press, 2004, pp. 19-80.

## **II: The Grammar of Democracy**

Srinivasan, J. (2008) 'Democracy', in Bhargava, R. and Acharya, A. (eds.) Political Theory: An Introduction. New Delhi: Pearson Longman, pp. 106-128.

Owen, D. (2003) 'Democracy', in Bellamy, R. and Mason, A. (eds.) Political Concepts. Manchester and New York: Manchester University Press, pp. 105-117.

Christiano, Th. (2008) 'Democracy', in Mckinnon, C. (ed.) Issues in Political Theory, New York: Oxford University Press, pp. 80-96.

Arblaster, A. (1994) Democracy. (2nd Edition). Buckingham: Open University Press.

Roy, A. 'Citizenship', in Bhargava, R. and Acharya, A. (eds.) Political Theory: An Introduction. New Delhi: Pearson Longman, pp. 130-146.

Brighouse, H. (2008) 'Citizenship', in Mckinnon, C. (ed.) Issues in Political Theory, New York: Oxford University Press, pp. 241-258.

## **PSC 1.2 : CONSTITUTIONAL GOVERNMENT AND DEMOCRACY IN INDIA**

Course objective: This course acquaints students with the constitutional design of state structures and institutions, and their actual working over time. The Indian Constitution accommodates conflicting impulses (of liberty and justice, territorial decentralization and a strong union, for instance) within itself. The course traces the embodiment of some of these conflicts in constitutional provisions, and shows how these have played out in political practice. It further encourages a study of state institutions in their mutual interaction, and in interaction with the larger extra-constitutional environment.

### **I. The Constituent Assembly and the Constitution (16 lectures)**

#### **Unit I: (2 weeks or 8 lectures)**

Philosophy of the Constitution, the Preamble, and Features of the Constitution

#### **Unit II: (2 weeks or 8 lectures)**

Fundamental Rights and Directive Principles

#### **Unit III: Organs of Government (20 lectures)**

- a. The Legislature: Parliament (1.5 weeks or 6 lectures)
- b. The Executive: President and Prime Minister (2 weeks or 8 lectures)
- c. The Judiciary: Supreme Court (1.5 weeks or 6 lectures)

#### **Unit IV: Federalism (12 lectures)**

Federalism: Nature of Indian Federalism, Centre-State Relations, Role of the Governor, Fifth and Sixth Schedules.

#### **Unit V: Decentralization (6 Lectures)**

Panchayati Raj and Municipalities

## **READING LIST**

### **I. The Constituent Assembly and the Constitution**

- a. Philosophy of the Constitution, the Preamble, and Features of the Constitution

#### **Essential Readings:**

G. Austin, (2010) 'The Constituent Assembly: Microcosm in Action', in *The Indian Constitution: Cornerstone of a Nation*, New Delhi: Oxford University Press, 15th print, pp.125.

R. Bhargava, (2008) 'Introduction: Outline of a Political Theory of the Indian Constitution', in R. Bhargava (ed.) *Politics and Ethics of the Indian Constitution*, New Delhi: Oxford University Press, pp. 1-40.

#### **Additional Reading:**

D. Basu, (2012) *Introduction to the Constitution of India*, New Delhi: Lexis Nexis. S. Chaube, (2009) *The Making and Working of the Indian Constitution*, Delhi: National Book Trust.

### **b. Fundamental Rights and Directive Principles Essential Readings:**

G. Austin, (2000) 'The Social Revolution and the First Amendment', in *Working a Democratic Constitution*, New Delhi: Oxford University Press, pp. 69-98. A. Sibal, (2010) 'From Niti to Nyaya,' *Seminar*, Issue 615, pp 28-34.

#### **Additional Reading:**

*The Constitution of India: Bare Act with Short Notes*, (2011) New Delhi: Universal, pp. 4-16.

## **II. Organs of Government**

### **a. The Legislature: Parliament**

#### **Essential Readings:**

B. Shankar and V. Rodrigues, (2011) 'The Changing Conception of Representation: Issues, Concerns and Institutions', in *The Indian Parliament: A Democracy at Work*, New Delhi: Oxford University Press, pp. 105-173.

V. Hewitt and S. Rai, (2010) 'Parliament', in P. Mehta and N. Jayal (eds.) *The Oxford Companion to Politics in India*, New Delhi: Oxford University Press, pp. 28-42.

### **b. The Executive: President and Prime Minister**

#### **Essential Readings:**

J. Manor, (2005) 'The Presidency', in D. Kapur and P. Mehta P. (eds.) *Public Institutions in India*, New Delhi: Oxford University Press, pp.105-127.

J. Manor, (1994) 'The Prime Minister and the President', in B. Dua and J. Manor (eds.) *Nehru to the Nineties: The Changing Office of the Prime Minister in India*, Vancouver: University of British Columbia Press, pp. 20-47.

H. Khare, (2003) 'Prime Minister and the Parliament: Redefining Accountability in the Age of Coalition Government', in A. Mehra and G. Kueck (eds.) *The Indian Parliament: A Comparative Perspective*, New Delhi: Konark, pp. 350-368.

### **c. The Judiciary: Supreme Court**

Essential Readings: U. Baxi, (2010) 'The Judiciary as a Resource for Indian Democracy', *Seminar*, Issue 615, pp. 61-67.

R. Ramachandran, (2006) 'The Supreme Court and the Basic Structure Doctrine' in B. Kirpal et.al (eds.) *Supreme but not Infallible: Essays in Honour of the Supreme Court of India*, New Delhi: Oxford University Press, pp. 107-133.

### **Additional Reading:**

L. Rudolph and S. Rudolph, (2008) 'Judicial Review Versus Parliamentary Sovereignty', in *Explaining Indian Institutions: A Fifty Year Perspective, 1956-2006: Volume 2: The Realm of Institutions: State Formation and Institutional Change*. New Delhi: Oxford University Press, pp. 183-210.

### **III. Federalism and Decentralization**

#### **a. Federalism: Division of Powers, Emergency Provisions, Fifth and Sixth Schedules** Essential Readings:

M. Singh, and R. Saxena (eds.), (2011) 'Towards Greater Federalization,' in *Indian Politics: Constitutional Foundations and Institutional Functioning*, Delhi: PHI Learning Private Ltd., pp. 166-195.

V. Marwah, (1995) 'Use and Abuse of Emergency Powers: The Indian Experience', in B. Arora and D. Verney (eds.) *Multiple Identities in a Single State: Indian Federalism in a Comparative Perspective*, Delhi: Konark, pp. 136-159.

B. Sharma, (2010) 'The 1990s: Great Expectations'; 'The 2000s: Disillusionment Unfathomable', in *Unbroken History of Broken Promises: Indian State and Tribal People*, Delhi: Freedom Press and Sahyog Pustak Kuteer, pp. 64-91.

*The Constitution of India: Bare Act with Short Notes, (2011) New Delhi: Universal, pp 192213.*

#### **Additional Readings:**

R. Dhavan and R. Saxena, (2006) 'The Republic of India', in K. Roy, C. Saunders and J. Kincaid (eds.) *A Global Dialogue on Federalism, Volume 3*, Montreal: Queen's University Press, pp. 166-197.

R. Manchanda, (2009) *The No Nonsense Guide to Minority Rights in South Asia*, Delhi: Sage Publications, pp. 105-109.

#### **b. Panchayati Raj and Municipalities**

##### **Essential Readings:**

P. deSouza, (2002) 'Decentralization and Local Government: The Second Wind of Democracy in India', in Z. Hasan, E. Sridharan and R. Sudarshan (eds.) *India's Living Constitution: Ideas, Practices and Controversies*, New Delhi: Permanent Black, pp. 370-404.

M. John, (2007) 'Women in Power? Gender, Caste and Politics of Local Urban Governance', in *Economic and Political Weekly*, Vol. 42(39), pp. 3986-3993.

Raghunandan, J. R (2012) *Decentralization and local governments: The Indian Experience*, Orient Black Swan, New Delhi

Baviskar, B.S and George Mathew (eds) 2009 *Inclusion and Exclusion in local governance: Field Studies from rural India*, New Delhi, Sage

## **Generic Elective:**

### **PSG 1.4: Constitutional Government and Democracy in India.**

Course objective: This course acquaints students with the constitutional design of state structures and institutions, and their actual working overtime. The Indian Constitution accommodates conflicting impulses (of liberty and justice, territorial decentralization and a strong union, for instance) within itself. The course traces the embodiment of some of these conflicts in constitutional provisions, and shows how these have played out in political practice. It further encourages a study of state institutions in their mutual interaction, and in interaction with the larger extra-constitutional environment.

### **I. The Constituent Assembly and the Constitution (16 lectures)**

#### **Unit I: (2 weeks or 8 lectures)**

Philosophy of the Constitution, the Preamble, and Features of the Constitution

#### **Unit II: (2 weeks or 8 lectures)**

Fundamental Rights and Directive Principles

#### **Unit III: Organs of Government (20 lectures)**

- a. The Legislature: Parliament (1.5 weeks or 6 lectures)
- b. The Executive: President and Prime Minister (2 weeks or 8 lectures)
- c. The Judiciary: Supreme Court (1.5 weeks or 6 lectures)

#### **Unit IV: Federalism (12 lectures)**

Federalism: Nature of Indian Federalism, Centre-State Relations, Role of the Governor, Fifth and Sixth Schedules.

#### **Unit V: Decentralization (6 Lectures)**

Panchayati Raj and Municipalities

### **READING LIST**

#### **I. The Constituent Assembly and the Constitution**

- a. Philosophy of the Constitution, the Preamble, and Features of the Constitution

#### **Essential Readings:**

G. Austin, (2010) 'The Constituent Assembly: Microcosm in Action', in *The Indian Constitution: Cornerstone of a Nation*, New Delhi: Oxford University Press, 15th print, pp.125.

R. Bhargava, (2008) 'Introduction: Outline of a Political Theory of the Indian Constitution', in R. Bhargava (ed.) *Politics and Ethics of the Indian Constitution*, New Delhi: Oxford University Press, pp. 1-40.

#### **Additional Reading:**

D. Basu, (2012) *Introduction to the Constitution of India*, New Delhi: Lexis Nexis. S. Chaube, (2009) *The Making and Working of the Indian Constitution*, Delhi: National Book Trust.

## **b. Fundamental Rights and Directive Principles Essential Readings:**

G. Austin, (2000) 'The Social Revolution and the First Amendment', in Working a Democratic Constitution, New Delhi: Oxford University Press, pp. 69-98. A. Sibal, (2010) 'From Niti to Nyaya,' Seminar, Issue 615, pp 28-34.

### **Additional Reading:**

The Constitution of India: Bare Act with Short Notes, (2011) New Delhi: Universal, pp. 4-16.

## **II. Organs of Government**

### **a. The Legislature: Parliament**

#### **Essential Readings:**

B. Shankar and V. Rodrigues, (2011) 'The Changing Conception of Representation: Issues, Concerns and Institutions', in The Indian Parliament: A Democracy at Work, New Delhi: Oxford University Press, pp. 105-173.

V. Hewitt and S. Rai, (2010) 'Parliament', in P. Mehta and N. Jayal (eds.) The Oxford Companion to Politics in India, New Delhi: Oxford University Press, pp. 28-42.

### **b. The Executive: President and Prime Minister**

#### **Essential Readings:**

J. Manor, (2005) 'The Presidency', in D. Kapur and P. Mehta P. (eds.) Public Institutions in India, New Delhi: Oxford University Press, pp.105-127.

J. Manor, (1994) 'The Prime Minister and the President', in B. Dua and J. Manor (eds.) Nehru to the Nineties: The Changing Office of the Prime Minister in India, Vancouver: University of British Columbia Press, pp. 20-47.

H. Khare, (2003) 'Prime Minister and the Parliament: Redefining Accountability in the Age of Coalition Government', in A. Mehra and G. Kueck (eds.) The Indian Parliament: A Comparative Perspective, New Delhi: Konark, pp. 350-368.

### **c. The Judiciary: Supreme Court**

Essential Readings: U. Baxi, (2010) 'The Judiciary as a Resource for Indian Democracy', Seminar, Issue 615, pp. 61-67.

R. Ramachandran, (2006) 'The Supreme Court and the Basic Structure Doctrine' in B. Kirpal et.al (eds.) Supreme but not Infallible: Essays in Honour of the Supreme Court of India, New Delhi: Oxford University Press, pp. 107-133.

#### **Additional Reading:**

L. Rudolph and S. Rudolph, (2008) 'Judicial Review Versus Parliamentary Sovereignty', in Explaining Indian Institutions: A Fifty Year Perspective, 1956-2006: Volume 2: The Realm of Institutions: State Formation and Institutional Change. New Delhi: Oxford University Press, pp. 183-210.

## **III. Federalism and Decentralization**

**a. Federalism: Division of Powers, Emergency Provisions, Fifth and Sixth Schedules** Essential Readings:

M. Singh, and R. Saxena (eds.), (2011) 'Towards Greater Federalization,' in Indian Politics: Constitutional Foundations and Institutional Functioning, Delhi: PHI Learning Private Ltd., pp. 166-195.

V. Marwah, (1995) 'Use and Abuse of Emergency Powers: The Indian Experience', in B. Arora and D. Verney (eds.) Multiple Identities in a Single State: Indian Federalism in a Comparative Perspective, Delhi: Konark, pp. 136-159.

B. Sharma, (2010) 'The 1990s: Great Expectations'; 'The 2000s: Disillusionment Unfathomable', in Unbroken History of Broken Promises: Indian State and Tribal People, Delhi: Freedom Press and Sahyog Pustak Kuteer, pp. 64-91.

*The Constitution of India: Bare Act with Short Notes, (2011) New Delhi: Universal, pp 192213.*

Additional Readings:

R. Dhavan and R. Saxena, (2006) 'The Republic of India', in K. Roy, C. Saunders and J. Kincaid (eds.) A Global Dialogue on Federalism, Volume 3, Montreal: Queen's University Press, pp. 166-197.

R. Manchanda, (2009) The No Nonsense Guide to Minority Rights in South Asia, Delhi: Sage Publications, pp. 105-109.

## **b. Panchayati Raj and Municipalities**

### **Essential Readings:**

P. deSouza, (2002) 'Decentralization and Local Government: The Second Wind of Democracy in India', in Z. Hasan, E. Sridharan and R. Sudarshan (eds.) India's Living Constitution: Ideas, Practices and Controversies, New Delhi: Permanent Black, pp. 370-404.

M. John, (2007) 'Women in Power? Gender, Caste and Politics of Local Urban Governance', in Economic and Political Weekly, Vol. 42(39), pp. 3986-3993.

Raghunandan, J. R (2012) Decentralization and local governments: The Indian Experience, Orient Black Swan, New Delhi

Baviskar, B.S and George Mathew (eds) 2009 Inclusion and Exclusion in local governance: Field Studies from rural India, New Delhi, Sage

## II Semester

### **PSC 2.1: POLITICAL THEORY-CONCEPTS AND DEBATES**

**Course Objective:** This course is divided into two sections. Section A helps the student familiarize with the basic normative concepts of political theory. Each concept is related to a crucial political issue that requires analysis with the aid of our conceptual understanding. This exercise is designed to encourage critical and reflective analysis and interpretation of social practices through the relevant conceptual toolkit. Section B introduces the students to the important debates in the subject. These debates prompt us to consider that there is no settled way of understanding concepts and that in the light of new insights and challenges, besides newer ways of perceiving and interpreting the world around us, we inaugurate new modes of political debates.

#### **Unit I. Importance of Freedom (10 Lectures)**

- a) Negative Freedom: Liberty
- b) Positive Freedom: Freedom as Emancipation and Development
- c) Important Issue: Freedom of belief, expression and dissent

#### **Unit II. Significance of Equality (12 lectures)**

- a) Formal Equality: Equality of opportunity
- b) Political equality
- c) Egalitarianism: Background inequalities and differential treatment
- d) Affirmative action

#### **Unit III. Indispensability of Justice (12 Lectures)**

- a) Procedural Justice
- b) Distributive Justice
- c) Global Justice
- d) Capital punishment

#### **Unit IV. The Universality of Rights (13 Lectures)**

- a) Natural Rights
- b) Moral and Legal Rights
- c) Three Generations of Rights
- d) Rights and Obligations
- e) Important Issue: Rights of the girl child

#### **Unit V: Major Debates (13 Lectures)**

- I. Political Obligation: Issues of political obligation and civil disobedience.
- II. Are human rights universal? Issue of cultural relativism.
- III. How do we accommodate diversity in plural society? Issues of multiculturalism and toleration.

#### **Essential Readings**

##### **I. Importance of Freedom**

Riley, Jonathan. (2008) 'Liberty' in Mckinnon, Catriona (ed.) Issues in Political Theory, New York: Oxford University Press, pp. 103-119.

Knowles, Dudley. (2001) Political Philosophy. London: Routledge, pp. 69- 132.

Swift, Adam. (2001) Political Philosophy: A Beginners Guide for Student's and Politicians. Cambridge: Polity Press, pp. 51-88.

Carter, Ian. (2003) 'Liberty', in Bellamy, Richard and Mason, Andrew (eds.). Political Concepts. Manchester: Manchester University Press, pp. 4-15.



Sethi, Aarti. (2008) 'Freedom of Speech and the Question of Censorship', in Bhargava, Rajeev and Acharya, Ashok. (eds.) Political Theory: An Introduction. New Delhi: Pearson Longman, pp. 308-319.

## **II. Significance of Equality**

Swift, Adam. (2001) Political Philosophy: A Beginners Guide for Student's and Politicians. Cambridge: Polity Press, pp. 91-132.

Casal, Paula & William, Andrew. (2008) 'Equality', in McKinnon, Catriona. (ed.) Issues in Political Theory. New York: Oxford University Press, pp. 149- 165.

Acharya, Ashok. (2008) 'Affirmative Action', in Bhargava, Rajeev and Acharya, Ashok. (eds.) Political Theory: An Introduction. New Delhi: Pearson Longman, pp. 298-307.

## **III. Indispensability of Justice**

Menon, Krishna. (2008) 'Justice', in Bhargava, Rajeev and Acharya, Ashok. (eds.) Political Theory: An Introduction. New Delhi: Pearson Longman, pp. 74-86.

Wolf, Jonathan. (2008) 'Social Justice', in McKinnon, Catriona. (ed.) Issues in Political Theory. New York: Oxford University Press, pp. 172-187.

Swift, Adam. (2001) Political Philosophy: A Beginners Guide for Student's and Politicians. Cambridge: Polity Press, pp. 9-48.

Knowles, Dudley. (2001) Political Philosophy. London: Routledge, pp. 177-238.

McKinnon, Catriona. (ed.) (2008) Issues in Political Theory. New York: Oxford University Press, pp. 289-305.

Bedau, Hugo Adam. (2003) 'Capital Punishment', in LaFollette, Hugh (ed.). The Oxford Handbook of Practical Ethics. New York: Oxford University Press, pp. 705-733.

## **IV. The Universality of Rights**

Seglow, Jonathan. (2003) 'Multiculturalism' in Bellamy, Richard and Mason, Andrew (eds.). Political Concepts. Manchester: Manchester University Press, pp. 156-168.

Tulkdar, P.S. (2008) 'Rights' in Bhargava, Rajeev and Acharya, Ashok. (eds.) Political Theory: An Introduction. New Delhi: Pearson Longman, pp. 88-104.

McKinnon, Catriona. (2003) 'Rights', in Bellamy, Richard and Mason, Andrew. (eds.) Political Concepts. Manchester: Manchester University Press, pp. 16-27.

Menlowe, M.A. (1993) 'Political Obligations', in Bellamy Richard.(ed.) Theories and Concepts of Politics. New York: Manchester University Press, pp. 174-194.

Amoah, Jewel. (2007) 'The World on Her Shoulders: The Rights of the Girl-Child in the Context of Culture & Identity', in Essex Human Rights Review, 4(2), pp. 1-23.

Working Group on the Girl Child (2007), A Girl's Right to Live: Female Foeticide and Girl Infanticide, available on [http://www.crin.org/docs/Girl's infanticide CSW 2007.txt](http://www.crin.org/docs/Girl's%20infanticide%20CSW%202007.txt)

## **Unit V**

Hyums, Keith. (2008) 'Political Authority and Obligation', in Mckinnon, Catriona. (ed.) Issues in Political Theory, New York: Oxford University Press, pp. 9-26

Martin, Rex. (2003) 'Political Obligation', in Bellamy, Richard and Mason, Andrew. (eds.) Political Concepts, Manchester: Manchester University Press, pp. 41-51.

Campbell, Tom. (2008) 'Human Rights' in Mckinnon, Catriona. (ed.) Issues in Political Theory. New York: Oxford University Press, pp. 194-210.

Mookherjee, Monica, 'Multiculturalism', in Mckinnon, Catriona. (ed.) Issues in Political Theory. New York: Oxford University Press, pp. 218- 234.

Seglow, Jonathan, 'Multiculturalism', in Bellamy, Richard and Mason, Andrew. (eds.) Political Concepts, Manchester: Manchester University Press, pp. 156-168.

## **PSC 2.2: POLITICAL PROCESS IN INDIA**

Course objective: Actual politics in India diverges quite significantly from constitutional legal rules. An understanding of the political process thus calls for a different mode of analysis - that offered by political sociology. This course maps the working of 'modern' institutions, premised on the existence of an individuated society, in a context marked by communitarian solidarities, and their mutual transformation thereby. It also familiarizes students with the working of the Indian state, paying attention to the contradictory dynamics of modern state power.

**Unit I: The Changing Nature of the Indian State (1.5 weeks or 6 lectures)**

Developmental, Welfare and Coercive Dimensions

**Unit II: Political Parties and the Party System (1.5 weeks or 6 lectures)**

Trends in the Party System; From the Congress System to Multi-Party Coalitions

**Unit III: Determinants of Voting Behaviour (2 weeks or 8 lectures)**

Caste, Class, Gender, Religion and the Politicization of Caste

**Unit IV: Regional Aspirations (2 weeks or 8 lectures)**

The Politics of Secession and Accommodation

**Unit V: Religion and Politics (2 weeks or 8 lectures)**

Debates on Secularism; Minority and Majority Communalism

### **READING LIST**

#### **I. Political Parties and the Party System: Trends in the Party System; From the Congress System to Multi-Party Coalitions**

##### **Essential Readings:**

R. Kothari, (2002) 'The Congress System', in Z. Hasan (ed.) *Parties and Party Politics in India*, New Delhi: Oxford University Press, pp 39-55. E. Sridharan, (2012) 'Introduction: Theorizing Democratic Consolidation, Parties and Coalitions', in *Coalition Politics and Democratic Consolidation in Asia*, New Delhi: Oxford University Press.

Y. Yadav and S. Palshikar, (2006) 'Party System and Electoral Politics in the Indian States, 1952-2002: From Hegemony to Convergence', in P. deSouza and E. Sridharan (eds.) *India's Political Parties*, New Delhi: Sage Publications, pp. 73-115.

#### **II. Determinants of Voting Behaviour: Caste, Class, Gender and Religion**

##### **Essential Readings:**

Y. Yadav, (2000) 'Understanding the Second Democratic Upsurge', in F. Frankel, Z. Hasan, and R. Bhargava (eds.) *Transforming India: Social and Political Dynamics in Democracy*, New Delhi: Oxford University Press, pp. 120-145.

C. Jaffrelot, (2008) 'Why Should We Vote? The Indian Middle Class and the Functioning of World's Largest Democracy', in *Religion, Caste and Politics in India*, Delhi: Primus, pp. 604-619. R. Deshpande, (2004) 'How Gendered was Women's Participation in Elections 2004?', *Economic and Political Weekly*, Vol. 39, No. 51, pp. 5431-5436.

S. Kumar, (2009) 'Religious Practices Among Indian Hindus,' *Japanese Journal of Political Science*, Vol. 10, No. 3, pp. 313-332.

#### **III. Regional Aspirations: The Politics of Secession and Accommodation**

##### **Essential Readings:**

M. Chadda, (2010) 'Integration through Internal Reorganisation', in S. Baruah (ed.) *Ethnonationalism in India: A Reader*, New Delhi: Oxford University Press, pp. 379-402.

P. Brass, (1999) 'Crisis of National Unity: Punjab, the Northeast and Kashmir', in *The Politics of India Since Independence*, New Delhi: Cambridge University Press and Foundation Books, pp.192-227.

#### **IV. Religion and Politics: Debates on Secularism: Minority and Majority Communalism**

Essential Readings: T. Pantham, (2004) 'Understanding Indian Secularism: Learning from its Recent Critics', in R. Vora and S. Palshikar (eds.) *Indian Democracy: Meanings and Practices*, New Delhi: Sage, pp. 235-256.

N. Menon and A. Nigam, (2007) 'Politics of Hindutva and the Minorities', in *Power and Contestation: India since 1989*, London: Fernwood Publishing, Halifax and Zed Books, pp.3660.

#### **Additional Reading:**

N. Chandhoke, (2010) 'Secularism', in P. Mehta and N. Jayal (eds.) *The Oxford Companion to Politics in India*, New Delhi: Oxford University Press, pp. 333-346.

#### **V. Caste and Politics: Caste in Politics and the Politicization of Caste**

Essential Readings:

R. Kothari, (1970) 'Introduction', in *Caste in Indian Politics*, Delhi: Orient Longman, pp.3-25.

M. Weiner, (2001) 'The Struggle for Equality: Caste in Indian Politics', in Atul Kohli (ed.) *The Success of India's Democracy*, New Delhi: Cambridge University Press, pp. 193-225.

G. Omvedt, (2002) 'Ambedkar and After: The Dalit Movement in India', in G. Shah (ed.) *Social Movements and the State*, New Delhi: Sage Publications, pp. 293-309.

#### **VI. Affirmative Action Policies: Women, Caste and Class**

Essential Readings: M. Galanter, (2002) 'The Long Half-Life of Reservations', in Z. Hasan, E. Sridharan and R. Sudarshan (eds.) *India's Living Constitution: Ideas, Practices, Controversies*, New Delhi: Permanent Black, pp. 306-318.

C. Jaffrelot, (2005) 'The Politics of the OBCs', in *Seminar*, Issue 549, pp. 41-45.

M. John, (2011) 'The Politics of Quotas and the Women's Reservation Bill in India', in M. Tsujimura and J. Steele (eds.) *Gender Equality in Asia*, Japan: Tohoku University Press, pp. 169-195.

#### **VII. Changing Nature of the Indian State: Developmental, Welfare and Coercive Dimensions**

Essential Readings:

S. Palshikar, (2008) 'The Indian State: Constitution and Beyond', in R. Bhargava (ed.) *Politics and Ethics of the Indian Constitution*, New Delhi: Oxford University Press, pp. 143-163.

R. Deshpande, (2005) 'State and Democracy in India: Strategies of Accommodation and Manipulation', *Occasional Paper, Series III, No. 4, Special Assistance Programme, Department of Politics and Public Administration, University of Pune*.

M. Mohanty, (1989) 'Duality of the State Process in India: A Hypothesis', *Bhartiya Samajik Chintan*, Vol. XII (1-2)

T. Byres, (1994) 'Introduction: Development Planning and the Interventionist State Versus Liberalization and the Neo-Liberal State: India, 1989-1996', in T. Byres (ed.) *The State, Development Planning and Liberalization in India*, New Delhi: Oxford University Press, 1994, pp.1-35.

A. Verma, (2007) 'Police Agencies and Coercive Power', in S. Ganguly, L. Diamond and M. Plattner (eds.) *The State of India's Democracy*, Baltimore: John Hopkins University Press, pp. 130-139.

## Generic Elective

### PSG 2.4: POLITICAL THEORY-CONCEPTS AND DEBATES

**Course Objective:** This course is divided into two sections. Section A helps the student familiarize with the basic normative concepts of political theory. Each concept is related to a crucial political issue that requires analysis with the aid of our conceptual understanding. This exercise is designed to encourage critical and reflective analysis and interpretation of social practices through the relevant conceptual toolkit. Section B introduces the students to the important debates in the subject. These debates prompt us to consider that there is no settled way of understanding concepts and that in the light of new insights and challenges, besides newer ways of perceiving and interpreting the world around us, we inaugurate new modes of political debates.

#### **Unit I. Importance of Freedom (10 Lectures)**

- a) Negative Freedom: Liberty
- b) Positive Freedom: Freedom as Emancipation and Development  
Important Issue: Freedom of belief, expression and dissent

#### **Unit II. Significance of Equality (12 lectures)**

- a) Formal Equality: Equality of opportunity
- b) Political equality
- c) Egalitarianism: Background inequalities and differential treatment  
Important Issue: Affirmative action

#### **Unit III. Indispensability of Justice (12 Lectures)**

- a) Procedural Justice
- b) Distributive Justice
- c) Global Justice  
Important Issue: Capital punishment

#### **Unit IV. The Universality of Rights (13 Lectures)**

- a) Natural Rights
- b) Moral and Legal Rights
- c) Three Generations of Rights
- d) Rights and Obligations  
Important Issue: Rights of the girl child

#### **Unit V: Major Debates (13 Lectures)**

- I. Political Obligation: Issues of political obligation and civil disobedience.
- II. Universality of Human Rights, Issue of cultural relativism.
- III. Accommodating diversity in plural society, Issues of multiculturalism and toleration.

#### **Essential Readings**

Riley, Jonathan. (2008) 'Liberty' in Mckinnon, Catriona (ed.) Issues in Political Theory, New York: Oxford University Press, pp. 103-119.

Knowles, Dudley. (2001) Political Philosophy. London: Routledge, pp. 69- 132.

Swift, Adam. (2001) Political Philosophy: A Beginners Guide for Student's and Politicians. Cambridge: Polity Press, pp. 51-88.

Carter, Ian. (2003) 'Liberty', in Bellamy, Richard and Mason, Andrew (eds.). Political Concepts. Manchester: Manchester University Press, pp. 4-15.

Sethi, Aarti. (2008) 'Freedom of Speech and the Question of Censorship', in Bhargava, Rajeev and Acharya, Ashok. (eds.) Political Theory: An Introduction. New Delhi: Pearson Longman, pp. 308-319.

- Swift, Adam. (2001) *Political Philosophy: A Beginners Guide for Student's and Politicians*. Cambridge: Polity Press, pp. 91-132.
- Casal, Paula & William, Andrew. (2008) 'Equality', in McKinnon, Catriona. (ed.) *Issues in Political Theory*. New York: Oxford University Press, pp. 149- 165.
- Acharya, Ashok. (2008) 'Affirmative Action', in Bhargava, Rajeev and Acharya, Ashok. (eds.) *Political Theory: An Introduction*. New Delhi: Pearson Longman, pp. 298-307.
- Menon, Krishna. (2008) 'Justice', in Bhargava, Rajeev and Acharya, Ashok. (eds.) *Political Theory: An Introduction*. New Delhi: Pearson Longman, pp. 74-86.
- Wolf, Jonathan. (2008) 'Social Justice', in McKinnon, Catriona. (ed.) *Issues in Political Theory*. New York: Oxford University Press, pp. 172-187.
- Swift, Adam. (2001) *Political Philosophy: A Beginners Guide for Student's and Politicians*. Cambridge: Polity Press, pp. 9-48.
- Knowles, Dudley. (2001) *Political Philosophy*. London: Routledge, pp. 177-238.
- McKinnon, Catriona. (ed.) (2008) *Issues in Political Theory*. New York: Oxford University Press, pp. 289-305.
- Bedau, Hugo Adam. (2003) 'Capital Punishment', in LaFollette, Hugh (ed.). *The Oxford Handbook of Practical Ethics*. New York: Oxford University Press, pp. 705-733.
- Seglow, Jonathan. (2003) 'Multiculturalism' in Bellamy, Richard and Mason, Andrew (eds.). *Political Concepts*. Manchester: Manchester University Press, pp. 156-168.
- Tulkdar, P.S. (2008) 'Rights' in Bhargava, Rajeev and Acharya, Ashok. (eds.) *Political Theory: An Introduction*. New Delhi: Pearson Longman, pp. 88-104.
- McKinnon, Catriona. (2003) 'Rights', in Bellamy, Richard and Mason, Andrew. (eds.) *Political Concepts*. Manchester: Manchester University Press, pp. 16-27.
- Menlowe, M.A. (1993) 'Political Obligations', in Bellamy Richard.(ed.) *Theories and Concepts of Politics*. New York: Manchester University Press, pp. 174-194.
- Amoah, Jewel. (2007) 'The World on Her Shoulders: The Rights of the Girl-Child in the Context of Culture & Identity', in *Essex Human Rights Review*, 4(2), pp. 1-23.
- Working Group on the Girl Child (2007), *A Girl's Right to Live: Female Foeticide and Girl Infanticide*, available on [http://www.crin.org/docs/Girl's infanticide CSW 2007.txt](http://www.crin.org/docs/Girl's%20infanticide%20CSW%202007.txt)
- Hyums, Keith. (2008) 'Political Authority and Obligation', in Mckinnon, Catriona. (ed.) *Issues in Political Theory*, New York: Oxford University Press, pp. 9-26
- Martin, Rex. (2003) 'Political Obligation', in Bellamy, Richard and Mason, Andrew. (eds.) *Political Concepts*, Manchester: Manchester University Press, pp. 41-51.
- Campbell, Tom. (2008) 'Human Rights' in Mckinnon, Catriona. (ed.) *Issues in Political Theory*. New York: Oxford University Press, pp. 194-210.
- Mookherjee, Monica, 'Multiculturalism', in Mckinnon, Catriona. (ed.) *Issues in Political Theory*. New York: Oxford University Press, pp. 218- 234.
- Seglow, Jonathan, 'Multiculturalism', in Bellamy, Richard and Mason, Andrew. (eds.) *Political Concepts*, Manchester: Manchester University Press, pp. 156-168.

### **III Semester**

#### **PSC 3.1: INTRODUCTION TO COMPARATIVE GOVERNMENT AND POLITICS**

Course objective: This is a foundational course in comparative politics. The purpose is to familiarize students with the basic concepts and approaches to the study of comparative politics. More specifically the course will focus on examining politics in a historical framework while engaging with various themes of comparative analysis in developed and developing countries.

#### **Unit I. Understanding Comparative Politics (8 lectures)**

- a. Nature and scope
- b. Going beyond Eurocentrism

#### **Unit II. A comparative study of constitutional developments and political economy (12 lectures)**

Constitutional Developments and Political Economy of Britain, USA and China.

#### **A comparative study of political Institutions in the following countries: Britain and China. (28 Lectures)**

**Unit III** : Political Institutions in Britain

**Unit IV** : Political Institutions in USA

**Unit V** : Political Institutions in China

#### **Essential Readings:**

##### **1. Understanding Comparative Politics**

J. Kopstein, and M. Lichbach, (eds), (2005) *Comparative Politics: Interests, Identities, and Institutions in a Changing Global Order*. Cambridge: Cambridge University Press, pp.1-5; 1636; 253-290.

M. Mohanty, (1975) 'Comparative Political Theory and Third World Sensitivity', in *Teaching Politics*, Nos. 1 and 2, pp. 22-38

#### **Additional Readings:**

A. Roy, (2001) 'Comparative Method and Strategies of Comparison', in *Punjab Journal of Politics*. Vol. xxv (2), pp. 1-15.

J. Blondel, (1996) 'Then and Now: Comparative Politics', in *Political Studies*. Vol. 47 (1), pp. 152-160.

N. Chandhoke, (1996) 'Limits of Comparative Political Analysis', in *Economic and Political Weekly*, Vol. 31 (4), January 27, pp. PE 2-PE2-PE8

#### **II Historical context of modern government**

##### **a. Capitalism**

#### **Essential Readings:**

R. Suresh, (2010) *Economy & Society -Evolution of Capitalism*, New Delhi, Sage Publications, pp. 151-188; 235-268.

G. Ritzer, (2002) 'Globalization and Related Process I: Imperialism, Colonialism, Development, Westernization, Easternization', in *Globalization: A Basic Text*. London: Wiley- Blackwell, pp. 63-84.

### **Additional Readings:**

M. Dobb, (1950) 'Capitalism', in *Studies in the Development of Capitalism*. London: Routledge and Kegan Paul Ltd, pp. 1-32.

E. Wood, (2002) 'The Agrarian origin of Capitalism', in *Origin of Capitalism: A Long View*. London: Verso, pp. 91-95; 166-181.

A. Hoogvelt, (2002) 'History of Capitalism Expansion', in *Globalization and Third World Politics*. London: Palgrave, pp. 14-28.

### **b. Socialism**

#### **Essential Readings:**

A. Brown, (2009) 'The Idea of Communism', in *Rise and Fall of Communism*, Harpercollins (e-book), pp. 1-25; 587-601. J. McCormick, (2007) 'Communist and Post-Communist States', in *Comparative Politics in Transition*, United Kingdom: Wadsworth, pp. 195-209 Additional Readings: R. Meek, (1957) 'The Definition of Socialism: A Comment', *The Economic Journal*. 67 (265), pp. 135-139.

### **c. Colonialism, decolonization& postcolonial society**

#### **Essential Readings:**

P. Duara, (2004) 'Introduction: The Decolonization of Asia and Africa in the Twentieth Century', in P. Duara, (ed), *Decolonization: Perspective From Now and Then*. London: Routledge, pp. 1-18.

J. Chiryankandath, (2008) 'Colonialism and Post-Colonial Development', in P. Burnell, et. al, *Politics in the Developing World*. New Delhi: Oxford University Press, pp. 31-52.

#### **Additional Reading:**

M. Mohanty, (1999) 'Colonialism and Discourse in India and China', Available at [http://www.ignca.nic.in/ks\\_40033.html](http://www.ignca.nic.in/ks_40033.html) http, Accessed: 24.03.2011.

## **III. Themes for Comparative Analysis**

### **Essential Reading:**

L. Barrington et. al (2010) *Comparative Politics - Structures & Choices*, Boston, Wadsworth, pp. 212-13; 71-76; 84-89.

M. Grant, (2009) 'United Kingdom Parliamentary System' in *The UK Parliament*. Edinburgh: Edinburgh University Press, pp. 24-43

J. McCormick, (2007) *Comparative Politics in Transition*, UK: Wadsworth, pp. 260-270 (China)

M. Kesselman, J. Krieger and William (2010), *Introduction to Comparative Politics: Political Challenges and Changing Agendas*, UK: Wadsworth. pp. 47-70 (Britain); 364- 388 (Nigeria); 625-648 (China); 415-440 (Brazil).

## **PSC 3.2: PERSPECTIVES ON PUBLIC ADMINISTRATION**

Objective: The course provides an introduction to the discipline of public administration. This paper encompasses public administration in its historical context with an emphasis on the various classical and contemporary administrative theories. The course also explores some of the recent trends, including feminism and ecological conservation and how the call for greater democratization is restructuring public administration. The course will also attempt to provide the students a comprehensive understanding on contemporary administrative developments.

### **Unit I: PUBLIC ADMINISTRATION AS A DISCIPLINE [ 15 lectures ]**

- Meaning, Dimensions and Significance of the Discipline
- Evolution of Public Administration
- Public and Private Administration

### **Unit II: THEORIES of Public Administration [ 12 lectures ]**

- Scientific management (F.W.Taylor)
- Human relations theory (Elton Mayo)
- Ecological approach (Fred Riggs)

### **Unit III: Principles of Organization ( 12 lectures)**

### **Unit IV: Personnel Administration (12 lectures)**

### **Unit V: MAJOR APPROACHES IN PUBLIC ADMINISTRATION [ 20 lectures ]**

- New Public Administration
- New Public Management
- New Public Service Approach
- Good Governance
- Feminist Perspectives

## **READINGS**

### **a. Public Administration as a Discipline Meaning, Dimensions and Significance of the Discipline.**

Nicholas Henry, Public Administration and Public Affairs, Prentice Hall, 1999

D. Rosenbloom, R. Kravchuk. and R. Clerkin, (2009) Public Administration: Understanding Management, Politics and Law in Public Sector, 7th edition, New Delhi: McGraw Hill, pp. 140

W. Wilson, (2004) 'The Study of Administration', in B. Chakrabarty and M. Bhattacharya (eds), Administrative Change and Innovation: a Reader, New Delhi: Oxford University Press, pp. 85-101

### **b. Public and Private Administration.**

M. Bhattacharya, (2008) New Horizons of Public Administration, 5th Revised Edition. New Delhi: Jawahar Publishers, pp. 37-44.

G. Alhson, (1997) 'Public and Private Management', in Shafritz, J. and Hyde, A. (eds.) Classics of Public Administration, 4th Edition. Forth Worth: Hartcourt Brace, TX, pp. 510-529.

### **Evolution of Public Administration**

N. Henry, Public Administration and Public Affairs, 12th edition. New Jersey: Pearson, 2013

M. Bhattacharya, Restructuring Public Administration: A New Look, New Delhi: Jawahar Publishers, 2012



P.Dunleavy and C.Hood, "From Old Public Administration to New Public Management", Public Money and Management, Vol. XIV No-3, 1994

M. Bhattacharya, New Horizons of Public Administration, New Delhi: Jawahar Publishers, 2011

Basu, Rumki, Public Administration : Concepts and Theories Sterling Publishers, New Delhi 2014

## **II. Theoretical Perspectives Scientific Management**

D. Gvishiani, Organisation and Management, Moscow: Progress Publishers, 1972

F. Taylor, 'Scientific Management', in J. Shafritz, and A. Hyde, (eds.) Classics of Public Administration, 5th Edition. Belmont: Wadsworth, 2004

P. Mouzelis, 'The Ideal Type of Bureaucracy' in B. Chakrabarty, And M. Bhattacharya, (eds), Public Administration: A Reader, New Delhi: Oxford University Press, 2003

### **Administrative Management**

D. Ravindra Prasad, Y. Pardhasaradhi, V. S. Prasad and P. Satyrnarayana, [eds.], Administrative Thinkers, Sterling Publishers, 2010

E. J. Ferreira, A. W. Erasmus and D. Groenewald, Administrative Management, Juta Academics, 2010

### **Ideal Type-Bureaucracy**

M. Weber, 'Bureaucracy', in C. Mills, and H. Gerth, From Max Weber: Essays in Sociology. Oxford: Oxford University Press, 1946

Warren. G.Bennis, Beyond Bureaucracy, Mc Graw Hill, 1973

### **Human Relations Theory**

D. Gvishiani, Organisation and Management, Moscow: Progress Publishers, 1972

B. Miner, 'Elton Mayo and Hawthorne', in Organisational Behaviour 3: Historical Origins and the Future. New York: M.E. Sharpe, 2006

### **Rational-Decision Making**

S. Maheshwari, Administrative Thinkers, New Delhi: Macmillan, 2009

Fredrickson and Smith, 'Decision Theory', in The Public Administration Theory Primer. Cambridge: Westview Press, 2003

### **Ecological approach**

R. Arora, 'Riggs' Administrative Ecology' in B. Chakrabarty and M. Bhattacharya (eds), Public Administration: A reader, New Delhi, Oxford University Press, 2003

A. Singh, Public Administration: Roots and Wings. New Delhi: Galgotia Publishing Company, 2002

F. Riggs, Administration in Developing Countries: The Theory of Prismatic Society. Boston: Houghton Mifflin, 1964

### **Innovation and Entrepreneurship**

Peter Drucker, Innovation and Entrepreneurship, Harper Collins, 1999 Peter F. Drucker, The Practice of Management, Harper Collins, 2006

## **I. Public Policy**

### **Concept, Relevance and Approaches**

T. Dye, (1984) Understanding Public Policy, 5th Edition. U.S.A: Prentice Hall, pp. 1-44

The Oxford Handbook of Public Policy, OUP, 2006

Xun Wu, M.Ramesh, Michael Howlett and Scott Fritzen, The Public Policy Primer: Managing

The Policy Process, Rutledge, 2010

Mary Jo Hatch and Ann .L. Cunliffe Organisation Theory : Modern, Symbolic and Postmodern

Perspectives, Oxford University Press, 2006

Michael Howlett, *Designing Public Policies : Principles And Instruments*, Rutledge, 2011  
The Oxford Handbook Of Public Policy, Oxford University Press, 2006

### **Formulation, implementation and evaluation**

Prabir Kumar De, *Public Policy and Systems*, Pearson Education, 2012

R.V. Vaidyanatha Ayyar, *Public Policy Making In India*, Pearson, 2009  
Surendra Munshi and Biju Paul Abraham [Eds.] *Good Governance, Democratic Societies And Globalisation*, Sage Publishers, 2004

## **IV. Major Approaches in Public Administration**

### **a. Development administration**

M. Bhattacharya, 'Chapter 2 and 4', in *Social Theory, Development Administration and Development Ethics*, New Delhi: Jawahar Publishers, 2006

F. Riggs, *The Ecology of Public Administration*, Part 3, New Delhi: Asia Publishing House, 1961

### **b. New Public Administration**

#### **Essential Reading:**

M. Bhattacharya, *Public Administration: Issues and Perspectives*, New Delhi: Jawahar Publishers, 2012

H. Frederickson, 'Toward a New Public Administration', in J. Shafritz, & A. Hyde, (eds.) *Classics of Public Administration*, 5th Edition, Belmont: Wadsworth, 2004

c. *New Public Management* U. Medury, *Public administration in the Globalization Era*, New Delhi: Orient Black Swan, 2010  
A. Gray, and B. Jenkins, 'From Public Administration to Public Management' in E. Otenyo and N. Lind, (eds.) *Comparative Public Administration: The Essential Readings*: Oxford University Press, 1997  
C. Hood, 'A Public Management for All Seasons', in J. Shafritz, & A. Hyde, (eds.) *Classics of Public Administration*, 5th Edition, Belmont: Wadsworth, 2004

### **d. New Public Service Approach**

R.B. Denhart & J.V. Denhart [Arizona State University] "The New Public Service: Serving Rather Than Steering", in *Public Administration Review*, Volume 60, No-6, November/December 2000

### **e. Good Governance**

A. Leftwich, 'Governance in the State and the Politics of Development', in *Development and Change*. Vol. 25, 1994  
M. Bhattacharya, 'Contextualizing Governance and Development' in B. Chakrabarty and M. Bhattacharya, (eds.) *The Governance Discourse*. New Delhi: Oxford University Press, 1998

B. Chakrabarty, *Reinventing Public Administration: The India Experience*. New Delhi: Orient Longman, 2007

U. Medury, *Public administration in the Globalisation Era*, New Delhi: Orient Black Swan, 2010

### **f. Feminist Perspective**

Camila Stivers, *Gender Images In Public Administration*, California : Sage Publishers, 2002

Radha Kumar, *The History of Doing*, New Delhi: Kali For Women, 1998

Sylvia Walby, *Theorising Patriarchy*, Oxford, Basil Blackwell. 1997

Amy. S. Wharton, *The Sociology Of Gender*, West Sussex : Blackwell-Wiley Publishers, 2012

Nivedita Menon [ed.], *Gender and Politics*, Delhi: Oxford University Press, 1999

Simone De Beauvoir, *The Second Sex*, London: Picador, 1988

Alison Jaggar, *Feminist Politics And Human Nature*, Brighton: Harvester Press, 1983

Maxine Molyneux and Shahra Razavi, *Gender, Justice, Development and Rights*, Oxford: Oxford University Press, 2002

## **PSC3.3: PERSPECTIVES ON INTERNATIONAL RELATIONS AND WORLD HISTORY**

Course Objective: This paper seeks to equip students with the basic intellectual tools for understanding International Relations. It introduces students to some of the most important theoretical approaches for studying international relations. The course begins by historically contextualizing the evolution of the international state system before discussing the agency structure problem through the levels-of-analysis approach. After having set the parameters of the debate, students are introduced to different theories in International Relations. It provides a fairly comprehensive overview of the major political developments and events starting from the twentieth century. Students are expected to learn about the key milestones in world history and equip them with the tools to understand and analyze the same from different perspectives. A key objective of the course is to make students aware of the implicit Euro - centricism of International Relations by highlighting certain specific perspectives from the Global South.

### **Unit I: Introduction to International Relations (15 Lectures)**

- i. Meaning Nature and Scope of International Relations (4 lectures)
- ii. History and IR: Emergence of the International State System.
  - a. Pre-Westphalia and Westphalia (6 lectures)
  - b. Post-Westphalia (5 lectures)

### **Unit II: Theoretical Perspectives (11 Lectures)**

- i. Classical Realism & Neo-Realism (6 lectures)
- ii. Liberalism & Neoliberalism (5 lectures)

### **Unit III: Theoretical Perspectives (Contd). (14 Lectures)**

- i. Marxist Approaches (5 lectures)
- ii. Feminist Perspectives (4 lectures)
- iii. Eurocentricism and Perspectives from the Global South (5 Lectures)

### **Unit IV: An Overview of Twentieth Century IR History (9 Lectures)**

- i. World War I: Causes and Consequences (2 Lectures)
- ii. Significance of the Bolshevik Revolution (2 Lectures)
- iii. Rise of Fascism / Nazism (2 Lectures)
- iv. World War II: Different phases and Consequences (3 Lectures)

### **Unit V: An Overview of Twentieth Century IR History (13 Lectures)**

- v. Cold War: Different Phases, Impacts (5 Lectures)
- vi. Emergence of the Third World (3 Lectures)
- vii. Collapse of the USSR and the End of the Cold War (2 Lectures)
- viii. Post Cold War Developments and Emergence of Other Power Centers of Power (4 Lectures)

### **Essential Readings:**

M. Nicholson, (2002) International Relations: A Concise Introduction, New York: Palgrave, pp. 1-4.

R. Jackson and G. Sorensen, (2007) Introduction to International Relations: Theories and Approches, 3rd Edition, Oxford: Oxford University Press, pp. 2-7

S. Joshua. Goldstein and J. Pevehouse, (2007) International Relations, New York: Pearson Longman, 2007, pp. 29-35

C. Brown and K. Ainley, (2009) Understanding International Relations, Basingstoke: Palgrave, pp. 1-16.

### **Additional Readings:**

K. Mingst and J. Snyder, (2011) *Essential Readings in International Relations*, New York: W.W. Norton and Company, pp. 1-15.

M. Smith and R. Little, (eds) (2000) 'Introduction', in *Perspectives on World Politics*, New York: Routledge, 2000, 1991, pp. 1-17.

J. Baylis and S. Smith (eds), (2008) *The Globalization of World Politics: An Introduction to International Relations*, New York: Oxford University Press, pp. 1-6.

R. Mansbach and K. Taylor, (2008) *Introduction to Global Politics*, New York: Routledge, pp. 2-32.

Rumki Basu, (ed)(2012) *International Politics: Concepts, Theories and Issues* New Delhi, Sage.

### **History and IR: Emergence of the International State System:**

#### **Essential Readings:**

R. Mansbach and K. Taylor, (2012) *Introduction to Global Politics*, New York: Routledge, pp. 33-68.

K. Mingst, (2011) *Essentials of International Relations*, New York: W.W. Norton and Company, pp. 16-63.

P. Viotti and M. Kauppi, (2007) *International Relations and World Politics: Security, Economy, Identity*, Pearson Education, pp. 40-85.

#### **Additional Readings:**

J. Baylis, S. Smith and P. Owens, (2008) *The Globalization of World Politics: An Introduction to International Relations*, New York: Oxford University Press, pp. 36-89.

R. Mansbach and K. Taylor, (2008) *Introduction to Global Politics*, New York: Routledge, pp. 70-135.

J Goldstein and J. Pevehouse, (2007) *International Relations*, New York: Pearson Longman, pp. 50-69.  
E. Hobsbawm, (1995) *Age of Extremes: The Short Twentieth Century 1914-1991*, Vikings.

S. Lawson, (2003) *International Relations*, Cambridge: Polity Press, pp. 21-60.

### **How do you Understand IR (Levels of Analysis):**

#### **Essential Readings:**

J. Singer, (1961) 'The International System: Theoretical Essays', *World Politics*, Vol. 14(1), pp. 77-92.

B. Buzan, (1995) 'The Level of Analysis Problem in International Relations Reconsidered,' in K. Booth and S. Smith, (eds), *International Relations Theory Today*, Pennsylvania: The Pennsylvania State University Press, pp. 198-216.

#### **Additional Readings:**

K. Mingst, (2011) *Essentials of International Relations*, New York: W.W. Norton and Company, pp. 93-178.

J. Goldstein and J. Pevehouse, (2007) *International Relations*, New York: Pearson Longman, pp. 35-49.

K. Waltz, (1959) *Man, The State and War*, Columbia: Columbia University Press.

### **Theoretical Perspectives:**

#### **Classical Realism and Neorealism**

Essential Readings: E. Carr, (1981) *The Twenty Years Crisis, 1919-1939: An Introduction to the Study of International Relations*, London: Macmillan, pp. 63-94.

H. Morgenthau, (2007) 'Six Principles of Political Realism', in R. Art and R. Jervis, *International Politics*, 8th Edition, New York: Pearson Longman, pp. 7-14.

T. Dunne and B. Schmidt, (2008) 'Realism', in J. Baylis and S. Smith (eds), *The Globalization of World Politics: An Introduction to International Relations*, New York: Oxford University Press, pp. 90-107.

K. Waltz, (2007) 'The Anarchic Structure of World Politics', in R. Art and R. Jervis, *International Politics*, 8th Edition, New York: Pearson Longman, pp. 29-49.

### **Additional Readings:**

M. Nicholson, (2002) *International Relations: A Concise Introduction*, New York: Palgrave, pp. 6-7.

H. Bull, (2000) 'The Balance of Power and International Order', in M. Smith and R. Little (eds), *Perspectives on World Politics*, New York: Routledge, pp. 115-124.

## **Liberalism and Neoliberalism**

### **Essential Readings:**

T. Dunne, (2008) 'Liberalism', in J. Baylis and S. Smith (eds.), *The Globalization of World Politics: An Introduction to International Relations*, New York: Oxford University Press, pp. 108-123.

R. Keohane and J. Nye, (2000) 'Transgovernmental Relations and the International Organization', in M. Smith and R. Little (eds.), *Perspectives on World Politics*, New York: Routledge, pp. 229-241.

### **Additional Readings:**

J. Goldstein and J. Pevehouse, (2007) *International Relations*, New York: Pearson Longman, pp. 127-137.

R. Jackson and G. Sorensen, (2007) *Introduction to International Relations: Theories and Approaches*, 3rd Edition, Oxford: Oxford University Press, pp. 97-128.

## **Marxist Approaches**

### **Essential Readings:**

I. Wallerstein, (2000) 'The Rise and Future Demise of World Capitalist System: Concepts for Comparative Analysis', in Michael Smith and Richard Little (eds), *Perspectives on World Politics*, New York: Routledge, pp. 305-317.

S. Hobden and R. Jones, (2008) 'Marxist Theories of International Relations' in J. Baylis and S. Smith (eds), *The Globalization of World Politics: An Introduction to International Relations*, New York: Oxford University Press, pp. 142-149; 155-158.

J. Goldstein and J. Pevehouse, (2007) *International Relations*, New York: Pearson Longman, pp. 494-496; 500-503.

### **Additional Readings:**

J. Galtung, (2000) 'A Structural Theory of Imperialism', in M. Smith and R. Little, (eds), *Perspectives on World Politics*, New York: Routledge, pp. 292-304.

A. Frank, (1966) 'The Development of Underdevelopment' *Monthly Review*, pp. 17-30.

P. Viotti and M. Kauppi (2007), *International Relations and World Politics: Security, Economy, Identity*, Pearson Education, pp. 40-85.

Modern History Sourcebook: Summary of Wallerstein on World System Theory, Available at <http://www.fordham.edu/halsall/mod/Wallerstein.asp>, Accessed: 19.04.2013

## **Feminist Perspectives**

### **Essential Readings:**

J. Tickner, (2007) 'A Critique of Morgenthau's Principles of Political Realism', in R. Art and R. Jervis, *International Politics*, 8th Edition, New York: Pearson Longman, pp. 15-28.

F. Halliday, (1994) *Rethinking International Relations*, London: Macmillan, pp. 147-166. Additional Readings:

M. Nicholson, *International Relations: A Concise Introduction*, New York: Palgrave, 2002, pp. 120-122.

J. Goldstein and J. Pevehouse, (2007) *International Relations*, New York: Pearson Longman, pp. 138-148.

S. Smith and P. Owens, (2008) 'Alternative Approaches to International Theory' in J. Baylis and S. Smith (eds), *The Globalization of World Politics: An Introduction to International Relations*, New York: Oxford University Press, pp. 181-184.

IR, Eurocentricism and Perspectives from the Global South on Eurocentricism Essential Readings: A. Acharya and B. Buzan, (2007) 'Why Is There No Non- Western IR Theory: Reflections on and From Asia', *International Relations Of The Asia- Pacific*, Vol 7(3), pp. 285-286.

T. Kayaoglu, (2010) 'Westphalian Eurocentrism in I R Theory', in *International Studies Review*, Vol. 12(2), pp. 193-217.

### **Additional Readings:**

O. Weaver and A. Tickner, (2009) 'Introduction: Geocultural Epistemologies', in A. Tickner and O. Waever (eds), *International Relations: Scholarship Around The World*, London: Routledge, pp. 1-31.

R. Kanth (ed), (2009) *The Challenge of Eurocentrism: Global Perspectives, Policy & Prospects*, New York: Palgrave-McMillan.

S. Amin, (2010) *Eurocentrism: Modernity, Religion & Democracy*, New York: Monthly Review Press.

## **An Overview of Twentieth Century IR History**

### **(a) World War I: Causes and Consequences**

Hobsbawm, E. (1995) *Age of Extreme: The Short Twentieth Century, 1914—1991*. London: Abacus, pp. 22-35.

### **(b) Significance of the Bolshevik Revolution**

Hobsbawm, E. (1995) *Age of Extreme: The Short Twentieth Century, 1914—1991*. London: Abacus, pp. 54-78.

### **(c) Rise of Fascism / Nazism**

Hobsbawm, E. (1995) *Age of Extreme: The Short Twentieth Century, 1914—1991*. London: Abacus, pp. 108-141.

Carr, E.H. (2004) *International Relations between the Two World Wars: 1919-1939*. New York: Palgrave, pp. 197-231 and 258-278.

### **(d) World War II: Causes and Consequences**

Taylor, A.J.P. (1961) *The Origins of the Second World War*. Harmondsworth: Penguin, pp.2965.

Carruthers, S.L. (2005) 'International History, 1900-1945' in Baylis, J. and Smith, S. (eds.) (2008)

The Globalization of World Politics. An Introduction to International Relations. 4th edn. Oxford: Oxford University Press, pp. 76-84.

**(e) Cold War: Different Phases**

Calvocoressi, P. (2001) *World Politics: 1945—2000*. Essex: Pearson, pp. 3-91.

Scott, L. (2005) 'International History, 1945-1990' in Baylis, J. and Smith, S. (eds.) (2008) *The Globalization of World Politics. An Introduction to International Relations*. 4th edn. Oxford: Oxford University Press, pp. 93-101.

Hobsbawm, E. (1995) *Age of Extreme: The Short Twentieth Century, 1914—1991*. London: Abacus, pp. 225-226.

**(f) Emergence of the Third World**

Hobsbawm, E. (1995) *Age of Extreme: The Short Twentieth Century, 1914—1991*. London: Abacus, pp. 207-222.

**(g) Collapse of the USSR and the End of the Cold War**

Scott, L. (2005) 'International History, 1945-1990' in Baylis, J. and Smith, S. (eds.) (2008) *The Globalization of World Politics. An Introduction to International Relations*. 4th edn. Oxford: Oxford University Press, pp. 93-101.

**(h) Post Cold War Developments and Emergence of Other Power Centres of Power: Japan, European Union (EU) and Brazil, Russia, India, China (BRIC)**

Brezeknski, Z. (2005) *Choice: Global Dominance or Global Leadership*. New York: Basic Books, pp. 85-127.34

Gill, S. (2005) 'Contradictions of US Supremacy' in Panitch, L. and Leys, C. (eds.) *Socialist Register: The Empire Reloaded*. London: Merlin Press. 2004, London, Merlin Press and New York, Monthly Review Press. Socialist Register, pp.24-47.

## Skilled and Enhancement Course

### **PSS 3.4: LEGISLATIVE PRACTICES AND PROCEDURES**

Course objective: To acquaint the student broadly with the legislative process in India at various levels, introduce them to the requirements of peoples' representatives and provide elementary skills to be part of a legislative support team and expose them to real life legislative work. These will be, to understand complex policy issues, draft new legislation, track and analyse ongoing bills, make speeches and floor statements, write articles and press releases, attend legislative meetings, conduct meetings with various stakeholders, monitor media and public developments, manage constituent relations and handle interoffice communications. It will also deepen their understanding and appreciation of the political process and indicate the possibilities of making it work for democracy.

#### **Unit-I.Powers and functions of people's representative at different tiers of governance (6 lectures)**

Members of Parliament, State legislative assemblies, functionaries of rural and urban local self - government from Zila Parishad, Municipal Corporation to Panchayat/ward.

#### **Unit- II:Llegislative process (2 lectures)**

Law Making Procedure, Role of the Standing committee in reviewing a bill, Legislative consultants, the framing of rules and regulations.

#### **Unit- III: The Legislative Committees (6 lectures)**

Types of committees, role of committees in reviewing government finances, policy, programmes, and legislation.

#### **Unit-IV: The Budget System in India (6 lectures)**

Overview of Budget Process, Role of Parliament in reviewing the Union Budget, Railway Budget, Examination of Demands for Grants of Ministries, Working of Ministries.

#### **Unit-V: Media monitoring and communication (4 lectures)**

Types of media and their significance for legislators; Basics of communication in print and electronic media.

### **READING LIST**

#### **I. Powers and functions of people's representative at different tiers of governance**

Essential Readings: M. Madhavan, and N. Wahi, (2008) Financing of Election Campaigns PRS, Centre for Policy Research, New Delhi, Available at: [http://www.prsindia.org/uploads/media/conference/Campaign\\_finance\\_brief.pdf](http://www.prsindia.org/uploads/media/conference/Campaign_finance_brief.pdf), Accessed: 19.04.2013

S. Vanka, (2008) Primer on MPLADS, Centre for Policy Research, New Delhi, Available at <http://www.prsindia.org/parliamenttrack/primers/mplads-487/>, Accessed: 19.04.2013

H. Kalra, (2011) Public Engagement with the Legislative Process PRS, Centre for Policy Research, New Delhi, Available at: <http://www.prsindia.org/administrator/uploads/media/Conference%202011/Public%20Engagement%20with%20the%20Legislative%20Process.pdf>, Accessed: 19.04.2013.

Government of India (Lok Sabha Secretariat), (2009) Parliamentary Procedures (Abstract Series), Available at <http://164.100.47.132/LssNew/abstract/index.aspx>, Accessed: 19.04.2013



## **II. Supporting the legislative process**

Essential Readings: Government of India, (Ministry of Parliamentary Affairs), (2009) Legislation, Parliamentary Procedure, Available at [http://mpa.nic.in/Manual/Manual\\_English/Chapter/chapter-09.htm](http://mpa.nic.in/Manual/Manual_English/Chapter/chapter-09.htm), Accessed: 19.04.2013

Government of India, (Ministry of Parliamentary Affairs) (2009), Subordinate Legislation, Parliamentary Procedure, Available at: [http://mpa.nic.in/Manual/Manual\\_English/Chapter/chapter-11.htm](http://mpa.nic.in/Manual/Manual_English/Chapter/chapter-11.htm) Accessed: 19.04.2013

## **III. Supporting the Legislative Committees**

Essential Readings:

P. Mehta, 'India's Unlikely Democracy: The Rise of Judicial Sovereignty', *Journal of Democracy*, Vol. 18(2), pp.70-83.

Government link: <http://loksabha.nic.in/>; <http://rajyasabha.nic.in/>; <http://mpa.nic.in/>

K. Sanyal, (2011) Strengthening Parliamentary Committees PRS, Centre for Policy Research, New Delhi, Available at: <http://www.prsindia.org/administrator/uploads/media/Conference%202011/Strengthening%20Parliamentary%20Committees.pdf>, Accessed: 19.04.2013

## **IV. Reading the Budget Document**

### **Essential Readings**

A. Celestine, (2011) How to Read the Union Budget PRS, Centre for Policy Research, New Delhi, Available at <http://www.prsindia.org/parliamenttrack/primers/how-to-read-theunion-budget-1023/>, Accessed: 19.04.2013

## **V. Support in media monitoring and communication**

Essential Reading: G. Rose, (2005) 'How to Be a Media Darling: There's No getting Away From It', *State Legislatures*, Vol. 31(3).

### **Additional Readings:**

N. Jayal and P. Mehta (eds), (2010) *The Oxford Companion to Politics in India*, Oxford University Press: New Delhi,

B. Jalan, (2007) *India's Politics*, New Delhi: Penguin. Initiating Discussion on Various Type of Debates in Rajya Sabha, Available at [http://rajyasabha.nic.in/rsnew/publication\\_electronic/75RS.pdf](http://rajyasabha.nic.in/rsnew/publication_electronic/75RS.pdf), Accessed: 19.04.2013.

Praxis of Parliamentary Committees: Recommendations of Committee on Rules published by Rajya Sabha, available at: [http://rajyasabha.nic.in/rsnew/publication\\_electronic/Praxis.pdf](http://rajyasabha.nic.in/rsnew/publication_electronic/Praxis.pdf), Accessed: 19.04.2013.

S.J. Phansalkar, *Policy Research in the Indian Context*

N. Singh, 'Some Economic Consequences of India's Institutions of Governance: A Conceptual Framework', Available at: [http://econ.ucsc.edu/faculty/boxjenk/wp/econ\\_conseq\\_2003\\_rev2.pdf](http://econ.ucsc.edu/faculty/boxjenk/wp/econ_conseq_2003_rev2.pdf), Accessed: 19.04.2013.

R. Guha, (2007), *India After Gandhi*, Macmillan: New Delhi. Parliamentary Procedures (Abstract Series) published by Lok Sabha, Available at <http://164.100.47.132/LssNew/abstract/index.aspx>, website: [www.loksabha.nic.in](http://www.loksabha.nic.in), Accessed: 19.04.2013.

Nomination of Members of Parliament on Committees, Councils, Boards and Commissions, etc., set up

by the Government, Ministry of Parliament Affairs, Available at [http://mpa.nic.in/Manual/Manual\\_English/Chapter/chapter-14.htm](http://mpa.nic.in/Manual/Manual_English/Chapter/chapter-14.htm), Accessed: 19.04.2013. Parliamentary Procedures: Problems and Perspectives 2009 Published by Rajya Sabha, Available at [http://rajyasabha.nic.in/rsnew/publication\\_electronic/parl\\_procedure2009.pdf](http://rajyasabha.nic.in/rsnew/publication_electronic/parl_procedure2009.pdf), Accessed: 19.04.2013.

Primer on the Budget Process published by PRS, Available at <http://www.prsindia.org/parliamenttrack/primers/the-budget-process-484/>, Accessed: 19.04.2013.

Background note on Financial Oversight by Parliament published by PRS, Available at <http://www.prsindia.org/administrator/uploads/media/Conference%20note/Conference%20note%20on%20financial%20oversight.pdf>, Accessed: 19.04.2013.

P. Keefer and S Khemani, (2009) 'When Do Legislators Pass On "Pork"? The Determinants of Legislator Utilization of a Constituency Development Fund in India', in World Bank Policy Research Working Paper Series 4929, pp. 1-45, Available at SSRN: <http://ssrn.com/abstract=1405160>, Accessed: 19.04.2013.

Parliamentary Procedures (Abstract Series), Lok Sabha, Available at <http://164.100.47.132/LssNew/abstract/process.htm> Budget, Parliamentary Procedure, Ministry of Parliamentary Affairs, available at [http://mpa.nic.in/Manual/Manual\\_English/Chapter/chapter-07.htm](http://mpa.nic.in/Manual/Manual_English/Chapter/chapter-07.htm), Accessed: 19.04.2013. <http://mpa.nic.in/mpahandbook/parlia13.pdf>

## Generic Elective

### PSG 3.5: UNITED NATIONS AND GLOBAL CONFLICTS

Course Objective: This course provides a comprehensive introduction to the most important multilateral political organization in international relations. It provides a detailed account of the organizational structure and the political processes of the UN, and how it has evolved since 1945, especially in terms of dealing with the major global conflicts. The course imparts a critical understanding of the UN's performance until now and the imperatives as well as processes of reforming the organization in the context of the contemporary global system.

#### Unit I. The United Nations (4 Lectures)

(a) An Historical Overview of the United Nations (b) Principles and Objectives

#### Unit II: Main Organs: Structures and Functions: (8 Lectures)

General Assembly, Security Council, Economic and Social Council; the International Court of Justice, Secretariat.

#### Unit III: Specialised Agencies: (10 Lectures)

a. International Labour Organisation [ILO], United Nations Educational, Scientific and Cultural Organisation [UNESCO], World Health Organisation [WHO].

b. UN programmes and funds: United Nations Children's Fund [UNICEF], United Nations Development Programme [UNDP], United Nations Environment Programme [UNEP], United Nations High Commissioner for Refugees [UNHCR]

#### Unit IV: Peace Keeping: (8 Lectures)

Peace Making and Enforcement, Peace Building and Responsibility to Protect (e) Millennium Development Goals, Sustainable Development Goals

#### Unit V: Assessment of the United Nations as an International Organisation: Achievements and Failures, Imperatives of Reforms and the Process of Reforms (9 Lectures)

Essential Readings I.

The United Nations (a) An Historical Overview of the United Nations Moore, J.A. Jr. and Pubantz, J. (2008) The new United Nations. Delhi: Pearson Education, pp. 39-62.

Goldstein, J. and Pevehouse, J.C. (2006) International relations. 6th edn. New Delhi: Pearson, pp. 265-282.

Taylor, P. and Groom, A.J.R. (eds.) (2000) The United Nations at the millennium. London: Continuum, pp. 1-20.

Gareis, S.B. and Varwick, J. (2005) The United Nations: an introduction. Basingstoke: Palgrave, pp. 1-40.

Gowan, P. (2010) 'US: UN', in Gowan, P. 'A calculus of power: grand strategy in the twentyfirst century. London: Verso, pp. 47-71.

Baylis, J. and Smith, S. (eds.) (2008) The globalization of world politics. an introduction to international relations. 4th edn. Oxford: Oxford University Press, pp. 405-422.

Thakur, R. (1998) 'Introduction', in Thakur, R. (eds.) Past imperfect, future uncertain: The UN at Fifty. London: Macmillan, pp. 1-14.

Basu, Rumki (2014) United Nations: Structure and Functions of an international organization, New Delhi, Sterling Publishers

#### (b) Principles and Objectives

Gareis, S.B. and Varwick, J. (2005) The United Nations: An introduction. Basingstoke: Palgrave, pp. 15-21.

(c) Structures and Functions: General Assembly; Security Council, and Economic and Social Council; the

International Court of Justice and the specialised agencies (International Labour Organisation [ILO], United Nations Educational, Scientific and Cultural Organisation [UNESCO], World Health Organisation [WHO], and UN programmes and funds: United Nations Children's Fund [UNICEF], United Nations Development Programme [UNDP], United Nations Environment Programme [UNEP], United Nations High Commissioner for Refugees [UNHCR])

Taylor, P. and Groom, A.J.R. (eds.) (2000) *The United Nations at the millennium*. London: Continuum, pp. 21-141.

Moore, J.A. Jr. and Pubantz, J. (2008) *The new United Nations*. Delhi: Pearson Education, pp. 119-135.

(d) Peace Keeping, Peace Making and Enforcement, Peace Building and Responsibility to Protect Nambiar, S. (1995) 'UN peace-keeping operations', in Kumar, S. (eds.) *The United Nations at fifty*. New Delhi, UBS, pp. 77-94.

Whittaker, D.J. (1997) 'Peacekeeping', in *United Nations in the contemporary world*. London: Routledge, pp. 45-56.

White, B. et al. (eds.) (2005) *Issues in world politics*. 3rd edn. New York: Macmillan, pp. 113-132.

### **(e) Millennium Development Goals**

Moore, J.A. Jr. and Pubantz, J. (2008) *The new United Nations*. Delhi: Pearson Education, pp.264-266.

Sangal, P.S. (1986) 'UN, peace, disarmament and development', in Saxena, J.N. et.al. *United Nations for a better world*. New Delhi: Lancers, pp.109-114.

Baxi, U. (1986) 'Crimes against the right to development', in Saxena, J.N. et.al. *United Nations for a better world*. New Delhi: Lancers, pp.240-248.

Ghali, B.B. (1995) *An agenda for peace*. New York: UN, pp.5-38.

United Nations Department of Public Information. (2008) *The United Nations Today*. New York: UN.

## **II. Major Global Conflicts since the Second World War**

### **(a) Korean War**

Calvocoressi, P. (2001) *World Politics: 1945-200*. 3rd edn. Harlow: Pearson Education, pp. 116-124.

Armstrong, D., Lloyd, L. and Redmond, J. (2004) *International organisations in world politics*. 3rd edn. New York: Palgrave Macmillan, pp. 42-43.

Moore, J.A. Jr. and Pubantz, J. (2008) *The new United Nations*. Delhi: Pearson Education, pp. 64-65 and 172-173.

### **(b) Vietnam War**

Calvocoressi, P. (2001) *World Politics: 1945-200*. 3rd edn. Harlow: Pearson Education, pp. 528-546.

Baylis, J. and Smith, S. (eds.) (2008) *The globalization of world politics. an introduction to international relations*. 4th edn. Oxford: Oxford University Press, pp. 562-564.

### **(c) Afghanistan Wars**

Achcar, G. (2004) *Eastern cauldron*. New York: Monthly Review Press, pp. 29-45 and 234-241.

Achcar, G. (2003) *The clash of barbarisms: Sept. 11 and the making of the new world disorder*. Kolkata: K.P. Bachi & Co., pp. 76-81.

Prashad, V. (2002) *War against the planet*. New Delhi: Leftword, pp. 1-6.

Ali, T. (ed.) (2000) *Masters of the Universe*. London: Verso, pp. 203-216.

Calvocoressi, P. (2001) *World Politics: 1945-200*. 3rd edn. Harlow: Pearson Education, pp.570-576.

### **(d) Balkans: Serbia and Bosnia**

Ali, T. (ed.) (2000) *Masters of the Universe*. London: Verso, pp. 230-245 and 271-284.

Kaldor, M. and Vashee, B. (eds.) (1997) *New wars*. London: Wider Publications for the UN University, pp. 137-144 and 153-171.

Viotti, P.R. and Kauppi, M.V. (2007) *International relations and world politics-security, economy, identity*.

3rd edn. New Delhi: Pearson Education, pp. 470-471.

Goldstein, J.S. (2003) *International relations*. 3rd edn. Delhi: Pearson Education, pp 43-51.

Moore, J.A. Jr. and Pubantz, J. (2008) *The new United Nations*. Delhi: Pearson Education, pp.24-27.

### **III. Political Assessment of the United Nations as an International Organisation: Imperatives of Reforms and the Process of Reforms**

Roberts, A. and Kingsbury, B. (eds.) (1994) *United Nations, Divided World*. 2nd edn. Oxford: Clarendon Press, pp. 420-436.

Taylor, P. and Groom, A.J.R. (eds.) (2000) *The United Nations at the millennium*. London: Continuum, pp. 196-223 and 295-326.

Gareis, S.B. and Varwick, J. (2005) *The United Nations: An introduction*. Basingstoke: Palgrave, pp. 214-242.

Moore, J.A. Jr. and Pubantz, J. (2008) *The new United Nations*. Delhi: Pearson Education, pp. 91-112.

#### **Additional Readings**

Claude, I. (1984) *Swords into plowshares: the progress and problems of international organisation*. 4th edn. New York: Random House.

Dodds, F. (ed.) (1987) *The way forward: beyond the agenda 21*. London: Earthscan.

Anan, K. (1997) *Renewing the United Nations: A Programme for Survival*. General Assembly Document: A/51/950; 14 July 1997. Available from:

[http://daccessdds.un.org/doc/UNDOC/GEN/N97/189/79/1MG/n9718979.pdf,Open Element](http://daccessdds.un.org/doc/UNDOC/GEN/N97/189/79/1MG/n9718979.pdf?Open+Element) (accessed on 13 October 2011).

## IV Semester

### **PSC 4.1: POLITICAL PROCESSES AND INSTITUTIONS IN COMPARATIVE PERSPECTIVE**

Course objective: In this course students will be trained in the application of comparative methods to the study of politics. The course is comparative in both what we study and how we study. In the process the course aims to introduce undergraduate students to some of the range of issues, literature, and methods that cover comparative political.

#### **Unit I: Approaches to Studying Comparative Politics (8 lectures)**

- a. Political Culture
- b. New Institutionalism

#### **Unit II: Electoral System (8 lectures)**

Definition and procedures: Types of election system (First Past the Post, Proportional Representation, Mixed Representation)

#### **Unit III: Party System (8 lectures)**

Historical contexts of emergence of the party system and types of parties

#### **Unit IV: Nation-state (8 lectures)**

What is nation–state? Historical evolution in Western Europe and postcolonial contexts 'Nation' and 'State': debates

#### **Unit V: Democratization and Federalism (16 lectures)**

- i. Process of democratization in postcolonial, post- authoritarian and post-communist countries
- ii. Historical context of Federation and Confederation: debates around territorial division of power.

#### **READING LIST**

I: Approaches to Studying Comparative Politics Essential Readings: M. Pennington, (2009) 'Theory, Institutional and Comparative Politics', in J. Bara and Pennington. (eds.) Comparative Politics: Explaining Democratic System. Sage Publications, New Delhi, pp. 13-40.

M. Howard, (2009) 'Culture in Comparative Political Analysis', in M. Lichback and A. Zuckerman, pp. 134- S. (eds.) Comparative Political: Rationality, Culture, and Structure. Cambridge: Cambridge University Press.

B. Rosamond, (2005) 'Political Culture', in B. Axford, et al. Politics, London: Routledge, pp. 57-81.

#### **Additional Readings:**

P. Hall, Taylor and C. Rosemary, (1996) 'Political Science and the Three New Institutionalism', Political Studies. XLIV, pp. 936-957.

L. Rakner, and R. Vicky, (2011) 'Institutional Perspectives', in P. Burnell, et .al. (eds.) Political in the Developing World. Oxford: Oxford University Press, pp. 53-70.

## **II: Electoral System**

### **Essential Readings:**

A. Heywood, (2002) 'Representation, Electoral and Voting', in *Politics*. New York: Palgrave, pp. 223-245.

A. Evans, (2009) 'Elections Systems', in J. Bara and M. Pennington, (eds.) *Comparative politics*. New Delhi: Sage Publications, pp. 93-119.

### **Additional Reading:**

R. Moser, and S. Ethan, (2004) 'Mixed Electoral Systems and Electoral System Effects: Controlled Comparison and Cross-national Analysis', in *Electoral Studies*. 23, pp. 575-599.

## **III: Party System**

### **Essential Readings:**

A. Cole, (2011) 'Comparative Political Parties: Systems and Organizations', in J. Ishiyama, and M. Breuning, (eds) *21st Century Political Science: A Reference Book*. Los Angeles: Sage Publications, pp. 150-158.

A. Heywood, (2002) 'Parties and Party System', in *Politics*. New York : Palgrave, pp. 247-268.

### **Additional Readings:**

B. Criddle, (2003) 'Parties and Party System', in R. Axtmann, (ed.) *Understanding Democratic Politics: An Introduction*. London: Sage Publications, pp. 134-142.

## **IV: Nation-state**

### **Essential Readings:**

W. O'Conner, (1994) 'A Nation is a Nation, is a Sate, is a Ethnic Group, is a ...', in J. Hutchinson and A. Smith, (eds.) *Nationalism*. Oxford: Oxford University Press, pp. 36-46.

K. Newton, and J. Deth, (2010) 'The Development of the Modern State ', in *Foundations of Comparative Politics: Democracies of the Modern World*. Cambridge: Cambridge University Press, pp. 13-33.

### **Additional Reading:**

A. Heywood, (2002), 'The State', in *Politics*. New York: Palgrave, pp. 85-102

## **V. Democratization Essential Readings:**

T. Landman, (2003) 'Transition to Democracy', in *Issues and Methods of Comparative Methods: An Introduction*. London: Routledge, pp. 185-215.

K. Newton, and J. Deth, (2010) 'Democratic Change and Persistence', in *Foundations of Comparative Politics: Democracies of the Modern World*. Cambridge: Cambridge University Press, pp. 53-67.

J. Haynes, (1999) 'State and Society', in *The Democratization*. Oxford: Blackwell, pp. 20-38; 39-63.

## **VI: Federalism**

### **Essential Readings:**

M. Burgess, (2006) *Comparative Federalism: Theory and Practice*. London: Routledge, pp. 135-161.

R. Watts, (2008) 'Introduction', in *Comparing Federal Systems*. Montreal and Kingston: McGill Queen's University Press, pp. 1-27

## **PSC4.2: PUBLIC POLICY AND ADMINISTRATION IN INDIA**

Objective: The paper seeks to provide an introduction to the interface between public policy and administration in India. The essence of public policy lies in its effectiveness in translating the governing philosophy into programs and policies and making it a part of the community living. It deals with issues of decentralization, financial management, citizens and administration and social welfare from a non-western perspective.

### **I. Public Policy [ 10 lectures ]**

- a. Definition, characteristics and models
- b. Public Policy Process in India

### **II. Decentralization [ 10 lectures ]**

- a. Meaning, significance and approaches and types
- b. Local Self Governance: Rural and Urban

### **III. Budget [ 12 lectures ]**

- a. Concept and Significance of Budget
- b. Budget Cycle in India
- c. Various Approaches and Types of Budgeting

### **IV. Citizen and Administration Interface [ 15 lectures ]**

- a. Public Service Delivery
- b. Redressal of Public Grievances: RTI, Lokpal, Citizens' Charter and E-Governance

### **V. Social Welfare Administration [ 20 lectures ]**

- a. Concept and Approaches of Social Welfare
- b. Social Welfare Policies:
  - Education: Right to Education,
  - Health: National Health Mission,
  - Food: Right To Food Security
  - Employment: MNREGA

### **READINGS**

Public Policy T. Dye, (1984) Understanding Public Policy, 5th Edition. U.S.A: Prentice Hall

R.B. Denhardt and J.V. Denhardt, (2009) Public Administration, New Delhi: Brooks/Cole

J. Anderson, (1975) Public Policy Making. New York: Thomas Nelson and sons Ltd.

M. Howlett, M. Ramesh, and A. Perl, (2009), Studying Public Policy: Policy Cycles and Policy subsystems, 3rd edition, Oxford: Oxford University Press

T. Dye, (2002) Understanding Public Policy, New Delhi: Pearson Y. Dror, (1989) Public Policy Making Reexamined. Oxford: Transaction Publication

### **Decentralization**

Satyajit Singh and Pradeep K. Sharma [eds.] Decentralisation: Institutions And Politics In Rural India, OUP,2007

D. A. Rondinelli and S. Cheema, Decentralisation and Development, Beverly Hills: Sage Publishers, 1983

N.G. Jayal, Democracy and The State: Welfare, Secular and Development in Contemporary India, Oxford : Oxford University Press, 1999

Bidyut Chakrabarty, Reinventing Public Administration: The Indian Experience, Orient Longman, 2007

Noorjahan Bava, Development Policies and Administration in India, Delhi: Uppal Publishers, 2001



Gabriel Almond and Sidney Verba, *The Civic Culture*, Boston: Little Brown, 1965

M.P.Lester, *Political Participation- How and Why do People Get Involved in Politics* Chicago: McNally, 1965

### **III. Budget**

Erik-Lane, J. (2005) *Public Administration and Public Management: The Principal Agent Perspective*. New York: Routledge

Henry, N.(1999) *Public Administration and Public Affairs*. New Jersey:Prentice Hall

Caiden, N.(2004) 'Public Budgeting Amidst Uncertainty and Instability', in Shafritz, J.M. & Hyde, A.C. (eds.) *Classics of Public Administration*. Belmont: Wadsworth

### **IV Citizen And Administration Interface**

R. Putnam , *Making Democracy Work* , Princeton University Press, 1993

Jenkins, R. and Goetz, A.M. (1999) 'Accounts and Accountability: Theoretical Implications of the Right to Information Movement in India', in *Third World Quarterly*. June

Sharma, P.K. & Devasher, M. (2007) 'Right to Information in India' in Singh, S. and Sharma, P. (eds.) *Decentralization: Institutions and Politics in Rural India*. New Delhi: Oxford University Press

Vasu Deva, *E-Governance In India: A Reality*, Commonwealth Publishers, 2005

World Development Report, World Bank, Oxford University Press, 1992.

M.J.Moon, *The Evolution of Electronic Government Among Municipalities: Rhetoric or Reality*, American Society For Public Administration, *Public Administration Review*, Vol 62, Issue 4, July –August 2002

Pankaj Sharma, *E-Governance: The New Age Governance*, APH Publishers, 2004

Pippa Norris, *Digital Divide: Civic Engagement, Information Poverty and the Internet in Democratic Societies*, Cambridge: Cambridge University Press, 2001.

Stephan Goldsmith and William D. Eggers, *Governing By Network: The New Shape of the Public Sector*, Brookings Institution [Washington], 2004

United Nation Development Programme, *Reconceptualising Governance*, New York, 1997

Mukhopadhyay, A. (2005) 'Social Audit', in *Seminar*. No.551.

### **V. Social Welfare Administration**

Jean Drèze and Amartya Sen, *India, Economic Development and Social Opportunity*, Oxford: Oxford University Press, 1995

J.Dreze and Amartya Sen, *Indian Development: Selected Regional Perspectives*, Oxford: Clarendon Press, 1997

Reetika Khera- *Rural Poverty And Public Distribution System*, EPW, Vol-XLVIII, No.45-46, Nov 2013

Pradeep Chaturvedi [ed.], *Women And Food Security: Role Of Panchayats*, Concept Publishers, 1997

National Food Security Mission: [nfsm.gov.in/Guidelines/XIIPlan/NFSMXII.pdf](http://nfsm.gov.in/Guidelines/XIIPlan/NFSMXII.pdf)

Jugal Kishore, *National Health Programs of India: National Policies and Legislations*, Century Publications, 2005

K. Lee and Mills, *The Economic Of Health In Developing Countries*, Oxford: Oxford University Press, 1983

K. Vijaya Kumar, *Right to Education Act 2009: Its Implementation as to Social Development in India*, Delhi: Akansha Publishers, 2012.

Marma Mukhopadhyay and Madhu Parhar(ed.) *Education in India: Dynamics of Development*, Delhi: Shipra Publications, 2007

Nalini Juneja, *Primary Education for All in the City of Mumbai: The Challenge Set By Local Actors'*, International Institute For Educational Planning, UNESCO: Paris, 2001

Surendra Munshi and Biju Paul Abraham [eds.] *Good Governance, Democratic Societies and Globalisation*, Sage Publishers, 2004

Basu Rumki (2015) *Public Administration in India Mandates, Performance and Future Perspectives*, New Delhi, Sterling Publishers

[www.un.org/millenniumgoals](http://www.un.org/millenniumgoals) <http://www.cefsindia.org> [www.righttofoodindia.org](http://www.righttofoodindia.org)

## **PSC 4.3: GLOBAL POLITICS**

- Course objective: This course introduces students to the key debates on the meaning and nature of globalization by addressing its political, economic, social, cultural and technological dimensions. In keeping with the most important debates within the globalization discourse, it imparts an understanding of the working of the world economy, its anchors and resistances offered by global social movements while analyzing the changing nature of relationship between the state and trans-national actors and networks. The course also offers insights into key contemporary global issues such as the proliferation of nuclear weapons, ecological issues, international terrorism, and human security before concluding with a debate on the phenomenon of global governance.
  
- **Globalization: Conceptions and Perspectives (23 lectures)**
  - Unit I:** a. Understanding Globalization and its Alternative Perspectives (6 lectures)  
b. Debates on Sovereignty and Territoriality (3 lectures)
  - Unit II:** a. Global Economy: Its Significance and Anchors of Global Political Economy: IMF, World Bank, WTO, TNCs (8 lectures)
  - Unit III:** a. Cultural and Technological Dimension (3 lectures)  
b. Global Resistances ;Global Social Movements and NGOs (3 lectures)
  
- \* **Contemporary Global Issues (20 lectures)**
  - Unit IV:** a. Ecological Issues: Historical Overview of International Environmental Agreements, north-south debates on environment, Climate Change, Global Commons Debate (7 lectures)  
b. Proliferation of Nuclear Weapons; disarmament and arms control (3 lectures)
  - Unit V:** a. International Terrorism: Non-State Actors and State Terrorism; Post 9/11 developments (4 lectures)  
b. Migration (3 lectures)  
c. Human Security (3 lectures)

### **READING LIST**

I. Globalization – Conceptions and Perspectives Understanding Globalization and its Alternative Perspectives

Essential Readings: G. Ritzer, (2010) *Globalization: A Basic Text*, Sussex: Wiley-Blackwell, pp. 33-62. M. Strager, (2009) *Globalization: A Very Short Introduction*, London: Oxford University Press, pp. 1-16. R. Keohane and J. Nye Jr, (2000) 'Globalization: What's New? What's Not? (And So What?)', in *Foreign Policy*, No 118, pp. 104-119.

#### **Additional Reading:**

A. McGrew, (2011) 'Globalization and Global Politics', in J. Baylis, S. Smith and P. Owens (eds.) *Globalization of World Politics: An Introduction to International Relations*, New York: Oxford University Press, pp. 14-31.

A. Heywood, (2011) *Global Politics*, New York: Palgrave-McMillan, pp. 1-24. W. Ellwood, (2005) *The No-nonsense Guide to Globalization*, Jaipur: NI-Rawat Publications, pp. 12-23. *Political: Debates on Sovereignty and Territoriality*

**Essential Readings:**

A. Heywood, (2011) *Global Politics*, New York: Palgrave-McMillan, pp. 112-134. R. Keohane, (2000) 'Sovereignty in International Society', in D. Held and A. McGrew (eds.) *The Global Trans-Formations Reader*, Cambridge: Polity Press, pp. 109-123.

**Additional Reading:**

K. Shimko, (2005) *International Relations: Perspectives and Controversies*, New York: Houghton Mifflin, pp. 195-219.

Global Economy: Its Significance and Anchors of Global Political Economy: IMF, World Bank, WTO, TNCs

**Essential Readings:**

A. Heywood, (2011) *Global Politics*, New York: Palgrave-McMillan, pp. 454-479.

T. Cohn, (2009) *Global Political Economy: Theory and Practice*, pp. 130-140 (IMF), 208-218 (WTO).

R. Picciotto, (2003) 'A New World Bank for a New Century', in C. Roe Goddard et al., *International Political: State-Market Relations in a Changing Global Order*, Boulder: Lynne Reinner, pp. 341-351.

A. Narlikar, (2005) *The World Trade Organization: A Very Short Introduction*, New York: Oxford University Press, pp. 22-98.

J. Goldstein, (2006) *International Relations*, New Delhi: Pearson, pp. 392-405 (MNC). P. Hirst, G. Thompson and S. Bromley, (2009) *Globalization in Question*, Cambridge: Polity Press, pp. 68-100 (MNC).

**Additional Readings:**

G. Ritzer, (2010) *Globalization: A Basic Text*, Sussex: Wiley-Blackwell, pp. 180-190.

F. Lechner and J. Boli (ed.), (2004) *The Globalization Reader*, London: Blackwell, pp. 236-239 (WTO).

D. Held et al, (1999) *Global Transformations: Politics, Economics and Culture*, California: Stanford University Press, pp. 242-282 (MNC).

T. Cohn, (2009) *Global Political Economy*, New Delhi: Pearson, pp. 250-323 (MNC).

**Cultural and Technological Dimension****Essential Readings:**

D. Held and A. McGrew (eds.), (2002) *Global Transformations Reader: Politics, Economics and Culture*, Cambridge: Polity Press, pp. 1-50; 84-91.

M. Steger, (2009) 'Globalization: A Contested Concept', in *Globalization: A Very Short Introduction*, London: Oxford University Press, pp. 1-16.

A. Appadurai, (2000) 'Grassroots Globalization and the Research Imagination', in *Public Culture*, Vol. 12(1), pp. 1-19.

**Additional Reading:**

J. Beynon and D. Dunkerley, (eds.), (2012) *Globalisation: The Reader*, New Delhi: Rawat Publications, pp. 1-19.

A. Vanaik, (ed.), (2004) *Globalization and South Asia: Multidimensional Perspectives*, New Delhi: Manohar Publications, pp. 171-191, 192-213, 301-317, 335-357.

**Global Resistances (Global Social Movements and NGOs)****Essential Readings:**

G. Ritzer, (2010) *Globalization: A Basic Text*, Sussex: Wiley-Blackwell, pp. 487-504.

R. O'Brien et al., (2000) *Contesting Global Governance: Multilateral Economic Institutions and Global*

Social Movements, Cambridge: Cambridge University Press, pp. 1-23.

J. Fisher, (1998) *Non-Governments: NGOs and Political Development in the Third World*, Connecticut: Kumarian Press, pp. 1- 37 (NGO).

### **Additional Readings:**

G. Laxter and S. Halperin (eds.), (2003) *Global Civil Society and Its Limits*, New York: Palgrave, pp. 1-21.

A. Heywood, (2011) *Global Politics*, New York: Palgrave-McMillan, pp. 150-156 (NGO).

P. Willets, (2011) 'Trans-National Actors and International Organizations in Global Politics', in J. Baylis, S. Smith and P. Owens (eds.) *Globalization of World Politics*, New York: Oxford University Press, pp. 334-342. (NGO)

## **II. Contemporary Global Issues**

Ecological Issues: Historical Overview of International Environmental Agreements,  
Climate Change,  
Global Commons Debate

### **Essential Readings:**

J. Volger, (2011) 'Environmental Issues', in J. Baylis, S. Smith and P. Owens (eds.) *Globalization of World Politics*, New York: Oxford University Press, pp. 348-362.

A. Heywood, (2011) *Global Politics*, New York: Palgrave, pp. 383-411.

N. Carter, (2007) *The Politics of Environment: Ideas, Activism, Policy*, Cambridge: Cambridge University Press, pp. 13-81.

### **Additional Readings:**

P. Bidwai, (2011) 'Durban: Road to Nowhere', in *Economic and Political Weekly*, Vol.46, No. 53, December, pp. 10-12.

K. Shimko, (2005) *International Relations Perspectives and Controversies*, New York: Hughton-Mifflin, pp. 317-339.

## **Proliferation of Nuclear Weapons**

### **Essential Readings:**

D. Howlett, (2011) 'Nuclear Proliferation', in J. Baylis, S. Smith and P. Owens (eds.) *Globalization of World Politics*, New York: Oxford University Press, pp. 384-397.

P. Viotti and M. Kauppi, (2007) *International Relations and World Politics: Security, Economy and Identity*, New Delhi: Pearson, pp. 238-272.

### **Additional Reading:**

A. Heywood, (2011) *Global Politics*, New York: Palgrave, pp. 264-281.

## **International Terrorism: Non-State Actors and State Terrorism; Post 9/11 developments**

### **Essential Readings:**

P. Viotti and M. Kauppi, (2007) *International Relations*, New Delhi: Pearson, pp. 276-307.

A. Heywood, (2011) *Global Politics*, New York: Palgrave, pp. 282-301.

### **Additional Readings:**

J. Kiras, (2011) 'Terrorism and Globalization', in J. Baylis, S. Smith and P. Owens (eds.) *Globalization of World Politics*, New York: Oxford University Press, pp. 366-380.

A. Vanaik, (2007) *Masks of Empire*, New Delhi: Tulika, pp. 103-128.

## **Migration**

Essential Readings:

G. Ritzer, (2010) *Globalization: A Basic Text*, Sussex: Wiley-Blackwell, pp. 298-322.

S. Castles, (2012) 'Global Migration', in B. Chimni and S. Mallavarapu (eds.) *International Relations: Perspectives For the Global South*, New Delhi: Pearson, pp. 272-285.

## **Human Security**

Essential Readings:

A. Acharya, (2011) 'Human Security', in J. Baylis, S. Smith and P. Owens (eds.) *Globalization of World Politics*, New York: Oxford University Press, pp. 480-493.

S. Tadjbakhsh and A. Chenoy, (2007) *Human Security*, London: Routledge, pp. 13-19; 123-127; 236-243.

## **Essential Readings:**

J. Rosenau, (1992) 'Governance, Order, and Change in World Politics', in J. Rosenau, and E. Czempiel (eds.) *Governance without Government: Order and Change in World Politics*, Cambridge: Cambridge University Press, pp. 1-29.

A. Kumar and D. Messner (eds), (2010) *Power Shifts and Global Governance: Challenges from South and North*, London: Anthem Press. P. Dicken, (2007) *Global Shift: Mapping the Changing Contours of the World Economy*, New York: The Guilford Press. J. Close, (2001) 'The Global Shift: A quantum leap in human evolution', Available at <http://www.stir-global-shift.com/page22.php>, Accessed: 19.04.2013.

## Skilled Enhancement Course

### **PSS 4.4: PEACE AND CONFLICT RESOLUTION**

Course Objective: The objective of an undergraduate application course for common students in Peace and Conflict Studies will cover in-depth knowledge of conflict analysis, conflict resolution, conflict prevention, as well as the historical and cultural context of organized violence. Peace and Conflict Resolution addresses the sources of war, social oppression and violence and the challenges of promoting peace and justice internationally and domestically. It also introduces more equitable, cooperative and nonviolent methods that can be used to transform unjust, violent or oppressive world situations. This course provides students with an overview of the Peace and Conflict Studies discipline, including key concepts and related theories. The course is designed to familiarize students with the historical background of various peace movements, to analyze principles used to resolve conflict, and to provide a view of how peace and conflict resolution are being pursued today. The course will also cover extensive understanding of current research and development within the field of peace and conflict studies and perspective of the environment, gender, migration, and ethnicity.

**Unit-1:** Concept of Conflict: Introduction to International Conflict Resolution

International Peace and Conflict Resolution: Sources of War: International and Domestic Issues and Trends

**Unit-II:** Conflict Resolution Theory: Models developed by Johan Galtung, Joseph Montville, Morton Deutsch, William Zartman, Levy Jack

**Unit-III:** Conflict resolution: Back ground of Various Peace Movements and Concepts, Principles used to resolve conflict

**Unit-IV:** Cross-border relationships between the world's peaceful and war-torn zones (migration and information flows, economic transactions, international rules and regulations, normative concepts and political decisions)

**Unit-V:** Conflict Transformation through conflict analyses and instrumentation of peace concepts

Current perspective of peace and conflict resolution: Grass-roots level perspective on war and Peace

### **READING LIST**

#### **Essential Readings**

International Conflict Resolution: Sources of War: International and Domestic Issues and Trends  
Kriesberg, Louis, Constructive Conflicts: From Escalation to Resolution, Rowman & Littlefield, Maryland, 1998, pp. 58-150

Starkey, Boyer, and Wilkenfield, Negotiating a Complex World. Rowman & Littlefield, Maryland, 1999, pp. 1-74

#### **Desirable Readings:**

Zartman, William (ed.), Collapsed States: The Disintegration and Restoration of Legitimate Authority, Reiner, Boulder, 1995, pp. 1-14 and 267-273

Zartman, William & Touval, Saadia "International Mediation in the Post-Cold War Era", in Crocker et al., Managing Global Chaos, USIP, 1996, pp. 445-461

## **Essential Readings**

### **What is Conflict: Introduction to International Conflict Resolution**

Zartman, William, "Dynamics and Constraints in Negotiations in Internal Conflicts", in Zartman, William (ed), *Elusive Peace: Negotiating an End to Civil Wars*, The Brookings Institution, Washington, 1995, pp. 3-29

## **Desirable Readings**

Zartman, William (ed.), *Collapsed States: The Disintegration and Restoration of Legitimate Authority*, Reiner, Boulder, 1995, pp. 1-14 and 267-273 Zartman, William & Touval, Saadia "International Mediation in the Post-Cold War Era", in Crocker et al., *Managing Global Chaos*, USIP, 1996, pp. 445-461

## **Essential Readings**

*International Conflict Resolution Theory: Models developed by Johan Galtung, Joseph Montville, Morton Deutsch, William Zartman, Levy Jack*

Levy, Jack, "Contending Theories of International Conflict: A Levels-of-Analysis Approach" in Crocker et al, *Managing Global Chaos*, USIP, 1995, pp. 3-24

Carr, Edward H., "Realism and Idealism," Richard Betts (ed), *Conflict After the Cold War*, Boston: Simon & Schuster, 1994.

## **Desirable Readings**

Carr, Edward H., "Realism and Idealism," Richard Betts (ed), *Conflict After the Cold War*, Boston: Simon & Schuster, 1994.

Waltz, Kenneth N., "Structural Causes and Economic Effects," Richard Betts (ed), *Conflict After the Cold War*, Boston: Simon & Schuster, 1994.

**Conflict resolution: Back ground of Various Peace Movements and Concepts, Principles used to resolve conflict**

## **Essential Readings**

Hampson, Fen Osler, *Nurturing Peace*, USIP, 1996, pp. 3-25

Galtung, Johan, *There Are Alternatives: Four Roads to Peace and Security*, Nottingham, Spokesman, 1984, pp. 162-205

## **Desirable Readings**

Galtung, Johan, *Peace by Peaceful Means: Peace and conflict, Development and Civilization*, Sage, London, 1996, pp. 9-114

Galtung, Johan, *The True Worlds: A Transnational Perspective*, New York, Free Press, 1980, pp. 107-149

Cross-boarder relationships between the world's peaceful and war-torn zones (migration and information flows, economic transactions, international rules and regulations, normative concepts and political decisions)

## **Essential Readings**

Kelman, Herbert C., "Interactive Problem Solving", in Fisher, Ronald J. (ed.) *Interactive Conflict Resolution*, Syracuse University Press, 1997, pp. 56-74

Kritz, Neil J., "The Rule of Law in the Post-conflict Phase: Building a Stable Peace", in Crocker et al, *Managing Global Chaos*, USIP, 1996, pp. 587-606

### **Desirable Readings**

Galtung, Johan, "The Basic Need Approach", in *Human Needs: a Contribution to the Current Debate*, Verlag, Cambridge, 1980, pp. 55-126

Saunders, Harold H., *A Public Peace Process: Sustained Dialogue to Transform Racial and Ethnic Conflicts*, New York, 1999, pp. 1-80

Conflict Transformation: is Peace Possible: Resolve problems through conflict analyses and instrumentation of peace concepts

### **Essential Readings**

Galtung, Johan, *There Are Alternatives: Four Roads to Peace and Security*, Nottingham, Spokesman, 1984, pp. 162-205

Galtung, Johan, "The Basic Need Approach", in *Human Needs: a Contribution to the Current Debate*, Verlag, Cambridge, 1980, pp. 55-126

### **Desirable Readings**

Galtung, Johan, *Peace by Peaceful Means: Peace and conflict, Development and Civilization*, Sage, London, 1996, pp. 9-114  
Galtung, Johan, *The True Worlds: A Transnational Perspective*, New York, Free Press, 1980, pp. 107-149

Current perspective of peace and conflict resolution: Grass-roots level perspective on war and Peace:  
Grass-roots level perspective on war and Peace

### **Essential Readings**

Deutsch, Morton, *The Resolution of Conflict: Constructive and Destructive Processes*, New Haven, Yale University Press, 1973, pp. 1-123

Galtung, Johan, *Peace by Peaceful Means: Peace and conflict, Development and Civilization*, Sage, London, 1996, pp. 9-114

### **Desirable Readings**

Zartman, William, "Dynamics and Constraints in Negotiations in Internal Conflicts", in Zartman, William (ed), *Elusive Peace: Negotiating an End to Civil Wars*, The Brookings Institution, Washington, 1995, pp. 3-29

Kelman, Herbert C., "Interactive Problem Solving", in Fisher, Ronald J. (ed.) *Interactive Conflict Resolution*, Syracuse University Press, 1997, pp. 56-74



## GENERIC ELECTIVE

### PSG 4.5: PUBLIC POLICY AND ADMINISTRATION IN INDIA

Objective: The paper seeks to provide an introduction to the interface between public policy and administration in India. The essence of public policy lies in its effectiveness in translating the governing philosophy into programs and policies and making it a part of the community living. It deals with issues of decentralization, financial management, citizens and administration and social welfare from a non-western perspective.

#### **I. Public Policy [ 10 lectures ]**

- a. Definition, characteristics and models
- b. Public Policy Process in India

#### **II. Decentralization [ 10 lectures ]**

- a. Meaning, significance and approaches and types
- b. Local Self Governance: Rural and Urban

#### **III. Budget [ 12 lectures ]**

- a. Concept and Significance of Budget
- b. Budget Cycle in India
- c. Various Approaches and Types of Budgeting

#### **IV. Citizen and Administration Interface [ 15 lectures ]**

- a. Public Service Delivery
- b. Redressal of Public Grievances: RTI, Lokpal, Citizens' Charter and E-Governance

#### **V. Social Welfare Administration [ 20 lectures ]**

- a. Concept and Approaches of Social Welfare
- b. Social Welfare Policies:
  - Education: Right to Education,
  - Health: National Health Mission,
  - Food: Right To Food Security
  - Employment: MNREGA

### **READINGS**

Public Policy T. Dye, (1984) Understanding Public Policy, 5th Edition. U.S.A: Prentice Hall  
R.B. Denhardt and J.V. Denhardt, (2009) Public Administration, New Delhi: Brooks/Cole  
J. Anderson, (1975) Public Policy Making. New York: Thomas Nelson and sons Ltd.  
M. Howlett, M. Ramesh, and A. Perl, (2009), Studying Public Policy: Policy Cycles and Policy subsystems, 3rd edition, Oxford: Oxford University Press  
T. Dye, (2002) Understanding Public Policy, New Delhi: Pearson  
Y. Dror, (1989) Public Policy Making Reexamined. Oxford: Transaction Publication

### **Decentralization**

Satyajit Singh and Pradeep K. Sharma [eds.] Decentralisation: Institutions And Politics In Rural India, OUP, 2007

D. A. Rondinelli and S. Cheema, Decentralisation and Development, Beverly Hills: Sage Publishers, 1983

N.G. Jayal, Democracy and The State: Welfare, Secular and Development in Contemporary India, Oxford: Oxford University Press, 1999

Bidyut Chakrabarty, Reinventing Public Administration: The Indian Experience, Orient Longman, 2007

Noorjahan Bava, *Development Policies and Administration in India*, Delhi: Uppal Publishers, 2001  
Gabriel Almond and Sidney Verba, *The Civic Culture*, Boston: Little Brown, 1965  
M.P.Lester, *Political Participation- How and Why do People Get Involved in Politics* Chicago: McNally, 1965

### **III. Budget**

Erik-Lane, J. (2005) *Public Administration and Public Management: The Principal Agent Perspective*. New York: Routledge  
Henry, N.(1999) *Public Administration and Public Affairs*. New Jersey:Prentice Hall  
Caiden, N.(2004) 'Public Budgeting Amidst Uncertainty and Instability', in Shafritz, J.M. & Hyde, A.C. (eds.) *Classics of Public Administration*. Belmont: Wadsworth

### **IV. Citizen And Administration Interface**

R. Putnam, *Making Democracy Work*, Princeton University Press, 1993  
Jenkins, R. and Goetz, A.M. (1999) 'Accounts and Accountability: Theoretical Implications of the Right to Information Movement in India', in *Third World Quarterly*. June  
Sharma, P.K. & Devasher, M. (2007) 'Right to Information in India' in Singh, S. and Sharma, P. (eds.) *Decentralization: Institutions and Politics in Rural India*. New Delhi: Oxford University Press  
Vasu Deva, *E-Governance In India: A Reality*, Commonwealth Publishers, 2005  
World Development Report, World Bank, Oxford University Press, 1992.  
M.J.Moon, *The Evolution of Electronic Government Among Municipalities: Rheoteric or Reality*, American Society For Public Administration, *Public Administration Review*, Vol 62, Issue 4, July –August 2002  
Pankaj Sharma, *E-Governance: The New Age Governance*, APH Publishers, 2004  
Pippa Norris, *Digital Divide: Civic Engagement, Information Poverty and the Internet in Democratic Societies*, Cambridge: Cambridge University Press, 2001.  
Stephan Goldsmith and William D. Eggers, *Governing By Network: The New Shape of the Public Sector*, Brookings Institution [Washington], 2004  
United Nation Development Programme, *Reconceptualising Governance*, New York, 1997  
Mukhopadhyay, A. (2005) 'Social Audit', in *Seminar*. No.551.

### **V. Social Welfare Administration**

Jean Drèze and Amartya Sen, *India, Economic Development and Social Opportunity*, Oxford: Oxford University Press, 1995  
J.Dreze and Amartya Sen, *Indian Development: Selected Regional Perspectives*, Oxford: Clarendon Press, 1997  
Reetika Khera- *Rural Poverty And Public Distribution System*, EPW, Vol-XLVIII, No.45-46, Nov 2013  
Pradeep Chaturvedi [ed.], *Women And Food Security: Role Of Panchayats*, Concept Publishers, 1997  
National Food Security Mission: [nfsm.gov.in/Guidelines/XIIPlan/NFSMXII.pdf](http://nfsm.gov.in/Guidelines/XIIPlan/NFSMXII.pdf)  
Jugal Kishore, *National Health Programs of India: National Policies and Legislations*, Century Publications, 2005  
K. Lee and Mills, *The Economic Of Health In Developing Countries*, Oxford: Oxford University Press, 1983  
K. Vijaya Kumar, *Right to Education Act 2009: Its Implementation as to Social Development in India*, Delhi: Akansha Publishers, 2012.  
Marma Mukhopadhyay and Madhu Parhar(ed.) *Education in India: Dynamics of Development*, Delhi: Shipra Publications, 2007  
Nalini Juneja, *Primary Education for All in the City of Mumbai: The Challenge Set By Local Actors'*, International Institute For Educational Planning, UNESCO: Paris, 2001  
Surendra Munshi and Biju Paul Abraham [eds.] *Good Governance, Democratic Societies and Globalisation*, Sage Publishers, 2004  
Basu Rumki (2015) *Public Administration in India Mandates, Performance and Future Perspectives*, New Delhi, Sterling Publishers  
[www.un.org/millenniumgoals](http://www.un.org/millenniumgoals) <http://www.cefsindia.org> [www.righttofoodindia.org](http://www.righttofoodindia.org)

## V Semester

### PSC 5.1: CLASSICAL POLITICAL PHILOSOPHY

Course objective: This course goes back to Greek antiquity and familiarizes students with the manner in which the political questions were first posed. Machiavelli comes as an interlude inaugurating modern politics followed by Hobbes and Locke. This is a basic foundation course for students.

#### Unit I: Plato (2 weeks)

Philosophy and Politics, Theory of Forms, Justice, Philosopher King/Queen, Communism  
Presentation theme: Critique of Democracy; Women and Guardianship, Censorship

#### Unit II: Aristotle (2 weeks)

Forms, Virtue, Citizenship, Justice, State and Household  
Presentation themes: Classification of governments; man as zoon politikon

#### Unit III: Machiavelli (2 weeks)

Virtue, Religion, Republicanism  
Presentation themes: morality and statecraft; vice and virtue

#### Unit IV: Hobbes (2 weeks)

Human nature, State of Nature, Social Contract, State  
Presentation themes: State of nature; social contract; Leviathan; atomistic individuals.

#### Unit V: Locke (2 weeks)

Laws of Nature, Natural Rights, Property,  
Presentation themes: Natural rights; right to dissent; justification of property.

### READING LIST

#### I. Text and Interpretation

##### Essential Readings:

T. Ball, (2004) 'History and Interpretation' in C. Kukathas and G. Gaus, (eds.) Handbook of Political Theory, London: Sage Publications Ltd. pp. 18-30.

B. Constant, (1833) 'The Liberty of the Ancients Compared with that of the Moderns', in D. Boaz, (ed), (1997) The Libertarian Reader, New York: The Free Press.

#### Plato

##### Essential Readings:

A. Skoble and T. Machan, (2007) Political Philosophy: Essential Selections. New Delhi: Pearson Education, pp. 9-32.

R. Kraut, (1996) 'Introduction to the study of Plato', in R. Kraut (ed.) The Cambridge Companion to Plato. Cambridge: Cambridge University Press, pp. 1-50.

C. Reeve, (2009) 'Plato', in D. Boucher and P. Kelly, (eds) Political Thinkers: From Socrates to the Present, Oxford: Oxford University Press, pp. 62-80

##### Additional Readings:

S. Okin, (1992) 'Philosopher Queens and Private Wives', in S. Okin Women in Western Political Thought, Princeton: Princeton University Press, pp. 28-50

R. Kraut, (1996) 'The Defence of Justice in Plato's Republic', in R. Kraut (ed.) The Cambridge Companion to Plato. Cambridge: Cambridge University Press, pp. 311-337

T. Saunders, (1996) 'Plato's Later Political Thought', in R. Kraut (ed.) The Cambridge Companion to Plato. Cambridge: Cambridge University Press, pp. 464-492.

## **Aristotle**

### **Essential Readings:**

A. Skoble and T. Machan, (2007) *Political Philosophy: Essential Selections*. New Delhi: Pearson Education, pp. 53-64.

T. Burns, (2009) 'Aristotle', in D. Boucher, and P. Kelly, (eds) *Political Thinkers: From Socrates to the Present*. Oxford: Oxford University Press, pp.81-99.

C. Taylor, (1995) 'Politics', in J. Barnes (ed.), *The Cambridge Companion to Aristotle*. Cambridge: Cambridge University Press, pp. 232-258

### **Additional Readings:**

J. Coleman, (2000) 'Aristotle', in J. Coleman *A History of Political Thought: From Ancient Greece to Early Christianity*, Oxford: Blackwell Publishers, pp.120-186

D. Hutchinson, (1995) 'Ethics', in J. Barnes, (ed.), *The Cambridge Companion to Aristotle* Cambridge: Cambridge University Press, pp. 195-232.

## **III. Interlude:**

### **Machiavelli**

#### **Essential Readings:**

A. Skoble and T. Machan, (2007) *Political Philosophy: Essential Selections*. New Delhi: Pearson Education, pp. 124-130

Q. Skinner, (2000) 'The Adviser to Princes', in *Machiavelli: A Very Short Introduction*, Oxford: Oxford University Press, pp. 23-53

J. Femia, (2009) 'Machiavelli', in D. Boucher, and P. Kelly, (eds) *Political Thinkers: From Socrates to the Present*. Oxford: Oxford University Press, pp. 163-184

#### **Additional Reading:**

Q. Skinner, (2000) 'The Theorist of Liberty', in *Machiavelli: A Very Short Introduction*. Oxford: Oxford University Press, pp. 54-87.

## **IV. Possessive Individualism**

### **Hobbes**

#### **Essential Readings:**

A. Skoble and T. Machan, (2007) *Political Philosophy: Essential Selections*. New Delhi: Pearson Education pp. 131-157.

D. Baumgold, (2009) 'Hobbes', in D. Boucher and P. Kelly (eds) *Political Thinkers: From Socrates to the Present*. Oxford: Oxford University Press, pp. 189-206.

C. Macpherson (1962) *The Political Theory of Possessive Individualism: Hobbes to Locke*. Oxford University Press, Ontario, pp. 17-29.

#### **Additional Readings:**

I. Hampsher-Monk, (2001) 'Thomas Hobbes', in *A History of Modern Political Thought: Major Political Thinkers from Hobbes to Marx*, Oxford: Blackwell Publishers, pp. 1-67.

A. Ryan, (1996) 'Hobbes's political philosophy', in T. Sorell, (ed.) *Cambridge Companion to Hobbes*. Cambridge: Cambridge University Press, pp. 208-245.

### **Locke**

#### **Essential Readings:**

A. Skoble and T. Machan, (2007) *Political Philosophy: Essential Selections*. New Delhi: Pearson Education, pp. 181-209.

J. Waldron, (2009) 'John Locke', in D. Boucher and P. Kelly, (eds) *Political Thinkers: From Socrates to the Present*. Oxford: Oxford University Press, pp. 207-224

C. Macpherson, (1962) *The Political Theory of Possessive Individualism: Hobbes to Locke*. Oxford University Press, Ontario, pp. 194-214.

#### **Additional Readings:**

R. Ashcraft, (1999) 'Locke's Political Philosophy', in V. Chappell (ed.) *The Cambridge Companion to Locke*, Cambridge. Cambridge University Press, pp. 226-251.

I. Hampsher-Monk, (2001) *A History of Modern Political Thought: Major Political Thinkers from Hobbes to Marx*, Oxford: Blackwell Publishers, pp. 69-116

## **PSC 5.2: INDIAN POLITICAL THOUGHT-I**

Course objective: This course introduces the specific elements of Indian Political Thought spanning over two millennia. The basic focus of study is on individual thinkers whose ideas are however framed by specific themes. The course as a whole is meant to provide a sense of the broad streams of Indian thought while encouraging a specific knowledge of individual thinkers and texts. Selected extracts from some original texts are also given to discuss in class. The list of additional readings is meant for teachers as well as the more interested students.

- Unit I:     Manu (6 lectures)**  
              **Social Laws**
- Unit II:     Kautilya (7 lectures) :**  
              **Theory of State**
- Unit III:    Barani (6 lectures)**  
              **Ideal Polity**
- Unit IV:    Abul Fazal (6 lectures)**  
              **Monarchy**
- Unit V:     Kabir (5 lectures)**  
              **Syncretism**

### **READING LIST**

#### **I. Traditions of Pre-modern Indian Political Thought:**

##### **Essential Readings:**

B. Parekh, (1986) 'Some Reflections on the Hindu Tradition of Political Thought', in T. Pantham, and K. Deutsch (eds.), *Political Thought in Modern India*, New Delhi: Sage Publications, pp. 17- 31.

A. Altekar, (1958) 'The Kingship', in *State and Government in Ancient India*, 3rd edition, Delhi: Motilal Banarsidass, pp. 75-108.

M. Shakir, (1986) 'Dynamics of Muslim Political Thought', in T. Pantham, and K. Deutsch (eds.), *Political Thought in Modern India*, New Delhi: Sage Publications, pp. 142- 160

G. Pandey, (1978) *Sraman Tradition: Its History and Contribution to Indian Culture*, Ahmedabad: L. D. Institute of Indology, pp. 52-73.

S. Saberwal, (2008) 'Medieval Legacy', in *Spirals of Contention*, New Delhi: Routledge, pp.131

#### **III. Manu: Social Laws**

##### **Essential Readings:**

Manu, (2006) 'Rules for Times of Adversity', in P. Olivelle, (ed. & trans.) *Manu's Code of Law: A Critical Edition and Translation of the Manava- Dharamsastra*, New Delhi: OUP, pp. 208- 213.

V. Mehta, (1992) 'The Cosmic Vision: Manu', in *Foundations of Indian Political Thought*, Delhi: Manohar, pp. 23- 39.

R. Sharma, ( 1991) 'Varna in Relation to Law and Politics (c 600 BC-AD 500)', in *Aspects of Political Ideas and Institutions in Ancient India*, Delhi: Motilal Banarsidass, pp. 233- 251.

P. Olivelle, (2006) 'Introduction', in *Manu's Code of Law: A Critical Edition and Translation of the Manava –Dharmasastra*, Delhi: Oxford University Press, pp. 3- 50.

#### **IV. Kautilya: Theory of State**

##### **Essential Readings:**

Kautilya, (1997) 'The Elements of Sovereignty' in R. Kangle (ed. and trns.), *Arthasastra of Kautilya*, New Delhi: Motilal Publishers, pp. 511- 514.

V. Mehta, (1992) 'The Pragmatic Vision: Kautilya and His Successor', in *Foundations of Indian Political*

Thought, Delhi: Manohar, pp. 88- 109.

R. Kangle, (1997) *Arthashastra of Kautilya-Part-III: A Study*, Delhi: Motilal Banarsidass, rpt., pp. 116- 142.

### **Additional Reading:**

J. Spellman, (1964) 'Principle of Statecraft', in *Political Theory of Ancient India: A Study of Kingship from the Earliest time to Ceirca AD 300*, Oxford: Clarendon Press, pp. 132- 170.

V. Agganna Sutta (Digha Nikaya): *Theory of Kingship Essential Readings*: S. Collins, (ed), (2001) *Agganna Sutta: An Annotated Translation*, New Delhi: Sahitya Academy, pp. 44-49.

S. Collins, (2001) 'General Introduction', in *Agganna Sutta: The Discussion on What is Primary (An Annotated Translation from Pali)*, Delhi: Sahitya Akademi, pp. 1- 26.

B. Gokhale, (1966) 'The Early Buddhist View of the State', in *The Journal of Asian Studies*, Vol. XXVI, (1), pp. 15- 22.

### **Additional Reading:**

L. Jayasurya, 'Budhism, Politics and Statecraft', Available at [ftp://ftp.buddhism.org/Publications/.../Voll1\\_03\\_Laksiri%20Jayasuriya.pdf](ftp://ftp.buddhism.org/Publications/.../Voll1_03_Laksiri%20Jayasuriya.pdf), Accessed: 19.04.2013.

## **VI. Barani: Ideal Polity**

### **Essential Reading:**

I. Habib, (1998) 'Ziya Barni's Vision of the State', in *The Medieval History Journal*, Vol. 2, (1), pp. 19- 36.

### **Additional Reading:**

M. Alam, (2004) 'Sharia Akhlaq', in *The Languages of Political Islam in India 1200- 1800*, Delhi: Permanent Black, pp. 26- 43

## **VII. Abul Fazal: Monarchy**

### **Essential Readings:**

A. Fazl, (1873) *The Ain-i Akbari* (translated by H. Blochmann), Calcutta: G. H. Rouse, pp. 47- 57.

V. Mehta, (1992) 'The Imperial Vision: Barni and Fazal', in *Foundations of Indian Political Thought*, Delhi: Manohar, pp. 134- 156.

### **Additional Readings:**

M. Alam, (2004) 'Sharia in Naserean Akhlaq', in *Languages of Political Islam in India 1200 1800*, Delhi: Permanent Black, pp. 46- 69.

I. Habib, (1998) 'Two Indian Theorist of The State: Barani and Abul Fazal', in *Proceedings of the Indian History Congress. Patiala*, pp. 15- 39.

VIII. Kabir: *Syncreticism Essential Readings*: Kabir. (2002) *The Bijak of Kabir*, (translated by L. Hess and S. Singh), Delhi: Oxford University Press, No. 30, 97, pp. 50- 51 & 69- 70.

V. Mehta, (1992) *Foundation of Indian Political Thought*, Delhi: Manohar, pp. 157- 183.

G. Omvedt, (2008) 'Kabir and Ravidas, Envisioning Begumpura', in *Seeking Begumpura: The Social Vision of Anti Caste Intellectual*, Delhi: Navayana, pp. 91- 107.

### **Additional Reading:**

L. Hess and S. Singh, (2002) 'Introduction', in *The Bijak of Kabir*, New Delhi: Oxford University Press, pp. 3- 35.

## Discipline Specific Elective

### PSD 5.3: Development Process and Social Movements in Contemporary India

**Course objective:** Under the influence of globalization, development processes in India have undergone transformation to produce spaces of advantage and disadvantage and new geographies of power. The high social reproduction costs and dispossession of vulnerable social groups involved in such a development strategy condition new theatres of contestation and struggles. A variety of protest movements emerged to interrogate and challenge this development paradigm that evidently also weakens the democratic space so very vital to the formulation of critical consensus. This course proposes to introduce students to the conditions, contexts and forms of political contestation over development paradigms and their bearing on the retrieval of democratic voice of citizens.

#### Unit-I: Development Process since Independence (2 weeks)

- a. State and planning
- b. Liberalization and reforms

#### Unit-II: Industrial Development Strategy and its Impact on the Social Structure (2 weeks)

- a. Mixed economy, privatization, the impact on organized and unorganized labour
- b. Emergence of the new middle class

#### Unit III: Agrarian Development Strategy and its Impact on the Social Structure (2 weeks)

- a. Land Reforms, Green Revolution
- b. Agrarian crisis since the 1990s and its impact on farmers

#### Unit IV: Social Movements (3 weeks)

Tribal, Peasant, Dalit and Women's movements

#### Unit V: Social Movements (contd). (3 weeks)

- a. Maoist Movements
- b. Civil rights movements

### READING LIST

#### I. The Development Process since Independence

Essential Readings:

A. Mozoomdar, (1994) 'The Rise and Decline of Development Planning in India', in T. Byres (ed.) *The State and Development Planning in India*. Delhi: Oxford University Press, pp. 73-108.

A. Varshney, (2010) 'Mass Politics or Elite Politics? Understanding the Politics of India's Economic Reforms' in R. Mukherji (ed.) *India's Economic Transition: The Politics of Reforms*, Delhi: Oxford University Press, pp 146-169.

P. Chatterjee, (2000) 'Development Planning and the Indian State', in Zoya Hasan (ed.), *Politics and the State in India*, New Delhi: Sage, pp.116-140.

P. Patnaik and C. Chandrasekhar, (2007) 'India: Dirigisme, Structural Adjustment, and the Radical Alternative', in B. Nayar (ed.), *Globalization and Politics in India*. Delhi: Oxford University Press, pp. 218-240.

P. Bardhan, (2005) 'Epilogue on the Political Economy of Reform in India', in *The Political Economy of Development in India*. 6th impression, Delhi: Oxford University Press.

T. Singh, (1979) 'The Planning Process and Public Process: a Reassessment', *R. R. Kale Memorial Lecture*, Pune: Gokhale Institute of Politics and Economics.

#### II. Industrial development strategy and its impact on social structure

Essential Readings:

A. Aggarwal, (2006) 'Special Economic Zones: Revisiting the Policy Debate', in *Economic and Political Weekly*, XLI (43-44), pp.4533-36.

B. Nayar (1989) *India's Mixed Economy: The Role of Ideology and its Development*, Bombay: Popular Prakashan.

F. Frankel, (2005) 'Crisis of National Economic Planning', in *India's Political Economy (1947- 2004): The Gradual Revolution*, Delhi: Oxford University Press, pp. 93-340.

L. Fernandes, (2007) *India's New Middle Class: Democratic Politics in an Era of Economic Reform*, Delhi: Oxford University Press.

S. Shyam, (2003) 'Organizing the Unorganized', in *Seminar*, [Footloose Labour: A Symposium on Livelihood Struggles of the Informal Workforce, 531] pp. 47-53.

S. Chowdhury, (2007) 'Globalization and Labour', in B. Nayar (ed.) *Globalization and Politics in India*, Delhi: Oxford University Press, pp.516-526.

V. Chibber, (2005) 'From Class Compromise to Class Accommodation: Labor's Incorporation into the Indian Political Economy' in R. Ray, and M.F. Katzenstein (eds.) *Social Movements in India*, Delhi: Oxford University Press, pp 32-60.

### III. Agrarian development strategy and its impact on social structure

Essential Readings:

A. Desai, (ed.), (1986) *Agrarian Struggles in India After Independence*, Delhi: Oxford University Press, pp. xi-xxxvi

F. Frankel, (1971) *India's Green Revolution: Economic Gains and Political Costs*, Princeton and New Jersey: Princeton University Press.

F. Frankel, (2009) *Harvesting Despair: Agrarian Crisis in India*, Delhi: Perspectives, pp. 161-169.

J. Harriss, (2006) 'Local Power and the Agrarian Political Economy' in Harriss, J. (ed) *Power Matters: Essays on Institutions, Politics, and Society in India*, Delhi. Oxford University Press, pp. 29-32.

K. Suri, (2006) 'Political economy of Agrarian Distress', in *Economic and Political Weekly*, XLI(16) pp. 1523-1529.

P. Joshi, (1979) *Land Reforms in India: Trends and Perspectives*, New Delhi: Allied publishers.

P. Appu, (1974) 'Agrarian Structure and Rural Development', in *Economic and Political Weekly*, IX (39), pp.70–75.

P. Sainath, (2010) 'Agrarian Crisis and Farmers', Suicide', *Occasional Publication*22, New Delhi: India International Centre (IIC).

M. Sidhu, (2010) 'Globalisation vis-à-vis Agrarian Crisis in India', in R. Deshpande and S. Arora, (eds.) *Agrarian Crises and Farmer Suicides (Land Reforms in India Series)*, New Delhi: Sage, pp. 149-174.

V. Sridhar, (2006) 'Why Do Farmers Commit Suicide? The Case Study of Andhra Pradesh', in *Economic and Political Weekly*, XLI(16).

### IV. Social Movements

Essential Readings:

G. Haragopal, and K. Balagopal, (1998) 'Civil Liberties Movement and the State in India', in M. Mohanty, P. Mukherji and O. Tornquist, (eds.) *People's Rights: Social Movements and the State in the Third World* New Delhi: Sage, pp. 353-371.

M. Mohanty, (2002) 'The Changing Definition of Rights in India', in S. Patel, J. Bagchi, and K. Raj (eds.) *Thinking Social Sciences in India: Essays in Honour of Alice Thorner Patel*, New Delhi: Sage.

G. Omvedt, (2012) 'The Anti-caste Movement and the Discourse of Power', in N. Jayal (ed.) *Democracy in India*, New Delhi: Oxford India Paperbacks, sixth impression, pp.481-508.

P. Ramana, (2011) 'India's Maoist Insurgency: Evolution, Current Trends and Responses', in M. Kugelman (ed.) *India's Contemporary Security Challenges*, Woodrow Wilson International Centre for Scholars Asia Programme, Washington D.C., pp.29-47.



A. Ray, (1996) 'Civil Rights Movement and Social Struggle in India', in *Economic and Political Weekly*, XXI(28). pp. 1202-1205.

A. Roy, (2010) 'The Women's Movement', in N.Jayal and P. Mehta (eds.) *The Oxford Companion to Politics in India*, New Delhi: Oxford University Press, pp.409-422.

N. Sundar, (2011) 'At War with Oneself: Constructing Naxalism as India's Biggest Security Threat', in M. Kugelman (ed.) *India's Contemporary Security Challenges*, Woodrow Wilson International Centre for Scholars Asia Programme, Washington D.C., pp.46-68.

M. Weiner, (2001) 'The Struggle for Equality: Caste in Indian Politics', in A.Kohli. (ed.) *The Success of India's Democracy*, Cambridge: CUP, pp.193-225.

S. Sinha, (2002) 'Tribal Solidarity Movements in India: A Review', in G. Shah. (ed.) *Social Movements and the State*, New Delhi: Sage, pp. 251-266.

#### Additional Readings:

S. Banerjee, (1986) 'Naxalbari in Desai', in A.R. (ed.) *Agrarian Struggles in India After Independence*. Delhi: Oxford University Press, pp.566-588.

B. Nayar, (ed.), (2007) *Globalization and Politics in India*. Delhi: Oxford University Press.

S. Roy and K. Debal, (2004) *Peasant Movements in Post-Colonial India: Dynamics of Mobilization and Identity*, Delhi: Sage.

G. Omvedt, (1983) *Reinventing Revolution, New Social Movements and the Socialist Tradition in India*, New York: Sharpe.

G. Shah, (ed.), (2002) *Social Movements and the State*. New Delhi: Sage Publications.

G. Shah, (2004) *Social Movements in India: A Review of Literature*, New Delhi: Sage Publications.

G. Rath, (ed.), (2006) *Tribal development in India: The Contemporary Debate*, New Delhi: Sage Publications.

J. Harris, (2009) *Power Matters: Essays on Institutions, Politics, and Society in India*. Delhi: Oxford University press.

K. Suresh, (ed.), (1982) *Tribal Movements in India*, Vol I and II, New Delhi: Manohar (emphasis on the introductory chapter).

M. Mohanty, P. Mukherji and O.Tornquist, (1998) *People's Rights: Social Movements and the State in the Third World*. New Delhi: Sage Publications.

M. Rao, (ed.), (1978) *Social Movements in India*, Vol. 2, Delhi: Manohar.

N. Jayal, and P. Mehta, (eds.), (2010) *The Oxford Companion to Politics in India*, Delhi:Oxford University Press.

P. Bardhan, (2005) *The Political Economy of Development in India*, 6th impression, Delhi: Oxford University Press.

R. Mukherji, (ed.), (2007) *India's Economic Transition: The Politics of Reforms*, Delhi: Oxford University Press.

R, Ray and M. Katzenstein, (eds.), (2005) *Social Movements in India*, Delhi: Oxford University Press.

S. Chakravarty, (1987) *Development Planning: The Indian Experience*, Delhi: Oxford University Press.

## PSD 5.4: INDIA'S FOREIGN POLICY IN A GLOBALIZING WORLD

Course objective: This course's objective is to teach students the domestic sources and the structural constraints on the genesis, evolution and practice of India's foreign policy. The endeavour is to highlight integral linkages between the 'domestic' and the 'international' aspects of India's foreign policy by stressing on the shifts in its domestic identity and the corresponding changes at the international level. Students will be instructed on India's shifting identity as a postcolonial state to the contemporary dynamics of India attempting to carve its identity as an 'aspiring power'. India's evolving relations with the superpowers during the Cold War and after, bargaining strategy and positioning in international climate change negotiations, international economic governance, international terrorism and the United Nations facilitate an understanding of the changing positions and development of India's role as a global player since independence.

### **Unit-I: India's Foreign Policy:**

a. From a Postcolonial State to an Aspiring Global Power (7 lectures)

b. India in the Contemporary Multipolar World (6 lectures)

**Unit-II:** India's Relations with the USA and Russia (9 lectures)

**Unit-III:** India's Engagements with China (6 lectures)

**Unit-IV:** India in South Asia: Debating Regional Strategies (9 lectures)

**Unit-V:** India's Negotiating Style and Strategies: Trade, Environment and Security Regimes (11 lectures)

### **READING LIST**

#### **I. India's Foreign Policy: From a Postcolonial State to an Aspiring Global Power**

Essential Readings:

S. Ganguly and M. Pardesi, (2009) 'Explaining Sixty Years of India's Foreign Policy', in *India Review*, Vol. 8 (1), pp. 4–19.

Ch. Ogden, (2011) 'International 'Aspirations' of a Rising Power', in David Scott (ed.), *Handbook of India's International Relations*, London: Routledge, pp.3-31

W. Anderson, (2011) 'Domestic Roots of Indian Foreign Policy', in W. Anderson, *Trusts with Democracy: Political Practice in South Asia*, Anthem Press: University Publishing Online.

#### **Additional Reading:**

J. Bandhopadhyaya, (1970) *The Making Of India's Foreign Policy*, New Delhi: Allied Publishers.

#### **II: India's Relations with the USA and USSR/Russia**

Essential Readings:

S. Mehrotra, (1990) 'Indo-Soviet Economic Relations: Geopolitical and Ideological Factors', in *India and the Soviet Union: Trade and Technology Transfer*, Cambridge University Press: Cambridge, pp. 8-28.

R. Hathaway, (2003) 'The US-India Courtship: From Clinton to Bush', in S. Ganguly (ed.), *India as an Emerging Power*, Frank Cass: Portland.

A. Singh, (1995) 'India's Relations with Russia and Central Asia', in *International Affairs*, Vol. 71 (1): 69-81.

M. Zafar, (1984), 'Chapter 1', in *India and the Superpowers: India's Political Relations with the Superpowers in the 1970s*, Dhaka, University Press.

### **Additional Readings:**

H. Pant, (2008) 'The U.S.-India Entente: From Estrangement to Engagement', in H. Pant, *Contemporary Debates in Indian Foreign and Security Policy: India Negotiates Its Rise in the International System*, Palgrave Macmillan: London.

D. Mistry, (2006) 'Diplomacy, Domestic Politics, and the U.S.-India Nuclear Agreement', in *Asian Survey*, Vol. 46 (5), pp. 675-698.

### **III: India's Engagements with China**

#### **Essential Readings:**

H. Pant, (2011) 'India's Relations with China', in D. Scott (ed.), *Handbook of India's International Relations*, London: Routledge, pp. 233-242.

A. Tellis and S. Mirski, (2013) 'Introduction', in A. Tellis and S. Mirski (eds.), *Crux of Asia: China, India, and the Emerging Global Order*, Carnegie Endowment for International Peace: Washington.

S. Raghavan, (2013) 'Stability in Southern Asia: India's Perspective', in A. Tellis and S. Mirski (eds.), *Crux of Asia: China, India, and the Emerging Global Order*, Carnegie Endowment for International Peace: Washington.

#### **Additional Reading:**

Li Li, (2013) 'Stability in Southern Asia: China's Perspective', in A. Tellis and S. Mirski (eds.), *Crux of Asia: China, India, and the Emerging Global Order*, Carnegie Endowment for International Peace: Washington.

### **IV: India in South Asia: Debating Regional Strategies**

#### **Essential Readings:**

S. Muni, (2003) 'Problem Areas in India's Neighbourhood Policy', in *South Asian Survey*, Vol. 10 (2), pp. 185-196.

S. Cohen, (2002) *India: Emerging Power*, Brookings Institution Press.

V. Sood, (2009) 'India and regional security interests', in Alyssa Ayres and C. Raja Mohan (eds), *Power realignments in Asia: China, India, and the United States*, New Delhi: Sage.

Additional Readings: M. Pardesi, (2005) 'Deducing India's Grand Strategy of Regional Hegemony from Historical and Conceptual Perspectives', IDSS Working Paper, 76, Available at <http://www.rsis.edu.sg/publications/WorkingPapers/WP76.pdf>, Accessed: 19.04.2013.

D. Scott, (2009) 'India's "Extended Neighbourhood" Concept: Power Projection for a Rising Power', in *India Review*, Vol. 8 (2), pp. 107-143

### **V: India's Negotiating Style and Strategies: Trade, Environment and Security Regimes**

#### **Essential Readings:**

S. Cohen, (2002) 'The World View of India's Strategic Elite', in S. Cohen, *India: Emerging Power*, Brookings Institution Press, pp. 36-65.

A. Narlikar, (2007) 'All that Glitters is not Gold: India's Rise to Power', in *Third World Quarterly*, Vol. 28 (5) pp. 983 – 996.

N. Dubash, (2012) 'The Politics of Climate Change in India: Narratives of Enquiry and Cobenefits', Working Paper, New Delhi: Centre for Policy Research.

N. Jayaprakash, (2000) 'Nuclear Disarmament and India', in *Economic and Political Weekly*, Vol. 35 (7), pp. 525-533.

**Additional Readings:**

P. Bidwai, (2005) 'A Deplorable Nuclear Bargain', in *Economic and Political Weekly*, Vol. 40 (31), pp. 3362-3364.

A. Anant, (2011) 'India and International Terrorism', in D. Scott (ed.), *Handbook of India's International Relations*, London: Routledge, pp. 266-277.

**VI: India in the Contemporary Multipolar World**

**Essential Readings:**

R. Rajgopalan and V. Sahni (2008), 'India and the Great Powers: Strategic Imperatives, Normative Necessities', in *South Asian Survey*, Vol. 15 (1), pp. 5–32.

C. Mohan, (2013) 'Changing Global Order: India's Perspective', in A. Tellis and S. Mirski (eds.), *Crux of Asia: China, India, and the Emerging Global Order*, Carnegie Endowment for International Peace: Washington.

A. Narlikar, (2006) 'Peculiar Chauvinism or Strategic Calculation? Explaining the Negotiating Strategy of a Rising India', in *International Affairs*, Vol. 82 (1), pp. 59-76.

**Additional Reading:**

P. Mehta, (2009) 'Still Under Nehru's Shadow? The Absence of Foreign Policy Frameworks in India', in *India Review*, Vol. 8 (3), pp. 209–233.

Online Resources: Government of India's Ministry of External Relations website at <http://www.mea.gov.in/> and specially its library which provides online resources at <http://mealib.nic.in/>

The Council of Foreign Relations has a regularly updated blog on India's foreign policy: <http://www.cfr.org/region/india/ri282> Centre for Policy Research's blog on IR and strategic affairs though it is not exclusively on India's foreign policy. <http://www.cprindia.org/blog/international-relations-and-security-blog>

Institute for Defence Studies and Analyses: <http://www.idsa.in/> Research and Information System: [www.ris.org.in/](http://www.ris.org.in/)

Indian Council of World Affairs: [www.icwa.in/](http://www.icwa.in/) Institute of Peace and Conflict Studies: [www.ipcs.org/](http://www.ipcs.org/) Indian Council for Research on International Economic Relations: [www.icrier.org/](http://www.icrier.org/)

## **Semester-6** **Core**

### **PSC 6.1: MODERN POLITICAL PHILOSOPHY**

Course objective: Philosophy and politics are closely intertwined. We explore this convergence by identifying four main tendencies here. Students will be exposed to the manner in which the questions of politics have been posed in terms that have implications for larger questions of thought and existence.

#### **Unit I: Modernity and its discourses (8 lectures)**

This section will introduce students to the idea of modernity and the discourses around modernity. Two essential readings have been prescribed.

#### **Unit II: Romantics (16 lectures)**

- a. Jean Jacques Rousseau (8 Lectures)  
Presentation themes: General Will; local or direct democracy; self-government; origin of inequality.
- b. Mary Wollstonecraft (8 Lectures)  
Presentation themes: Women and paternalism; critique of Rousseau's idea of education; legal rights

#### **Unit III: Liberal socialist (8 lectures)**

- a. John Stuart Mill  
Presentation themes: Liberty, suffrage and subjection of women, right of minorities; utility principle.

#### **Unit IV: Radicals (16 lectures)**

- a. **Karl Marx (8 Lectures)**  
Presentation themes: Alienation; difference with other kinds of materialism; class struggle

#### **Unit V: Alexandra Kollontai (8 Lectures)**

Presentation themes: Winged and wingless Eros; proletarian woman; socialization of housework; disagreement with Lenin

### **Reading List**

#### **I. Modernity and its discourses**

##### **Essential Readings:**

I. Kant. (1784) 'What is Enlightenment?,' available at <http://theliterarylink.com/kant.html>, Accessed: 19.04.2013

S. Hall (1992) 'Introduction', in *Formations of Modernity* UK: Polity Press pages 1-16

#### **II. Romantics**

Essential Readings: B. Nelson, (2008) *Western Political Thought*. New York: Pearson Longman, pp. 221-255. M. Keens-Soper, (2003) 'Jean Jacques Rousseau: The Social Contract', in M. Forsyth and M. Keens-Soper, (eds) *A Guide to the Political Classics: Plato to Rousseau*. New York: Oxford University Press, pp. 171-202.

C. Jones, (2002) 'Mary Wollstonecraft's Vindications and their Political Tradition' in C. Johnson, (ed.) *The Cambridge Companion to Mary Wollstonecraft*, Cambridge: Cambridge University Press, pp. 42-58.

S. Ferguson, (1999) 'The Radical Ideas of Mary Wollstonecraft', in *Canadian Journal of Political Science* XXXII (3), pp. 427-50, Available at <http://digitalcommons.ryerson.ca/politics>, Accessed: 19.04.2013.

### **III. Liberal Socialist**

Essential Readings: H. Magid, (1987) 'John Stuart Mill', in L. Strauss and J. Cropsey, (eds), History of Political Philosophy, 2nd edition. Chicago: Chicago University Press, pp. 784-801.

P. Kelly, (2003) 'J.S. Mill on Liberty', in D. Boucher, and P. Kelly, (eds.) Political Thinkers: From Socrates to the Present. New York: Oxford University Press, pp. 324-359.

### **IV. Radicals**

#### **Essential Readings:**

J. Cropsey, (1987) 'Karl Marx', in L. Strauss and J. Cropsey, (eds) History of Political Philosophy, 2nd Edition. Chicago: Chicago University Press, pp. 802-828.

L. Wilde, (2003) 'Early Marx', in D. Boucher and P. Kelly, P. (eds) Political Thinkers: From Socrates to the Present. New York: Oxford University Press, pp. 404-435.

V. Bryson, (1992) 'Marxist Feminism in Russia' in Feminist Political Theory, London: Palgrave Macmillan, pp. 114-122

C. Sypnowich, (1993) 'Alexandra Kollontai and the Fate of Bolshevik Feminism' Labour/Le Travail Vol. 32 (Fall 1992) pp. 287-295

A. Kollontai (1909), The Social Basis of the Woman Question, Available at <http://www.marxists.org/archive/kollonta/1909/social-basis.htm>, Accessed: 19.04.2013

#### **Additional Readings:**

A. Bloom, (1987) 'Jean-Jacques Rousseau', in Strauss, L. and Cropsey, J. (eds.) History of Political Philosophy, 2nd edition. Chicago: Chicago University Press, pp. 559-580.

Selections from A Vindication of the Rights of Woman, Available at <http://oregonstate.edu/instruct/phl302/texts/wollstonecraft/womana.html#CHAPTER%20II>, Accessed: 19.04.2013.

A. Skoble and T. Machan, (2007) Political Philosophy: Essential Selections, New Delhi: Pearson Education, pp. 328-354. B. Ollman (1991) Marxism: An Uncommon Introduction, New Delhi: Sterling Publishers.

G. Blakely and V. Bryson (2005) Marx and Other Four Letter Words, London: Pluto

A. Skoble, and T. Machan, (2007) Political Philosophy: Essential Selections, New Delhi: Pearson Education, pp. 286-327.

A. Kollontai, (1977) 'Social Democracy and the Women's Question', in Selected Writings of Alexandra Kollontai, London: Allison & Busby, pp. 29-74.

A. Kollontai, (1977) 'Make Way for Winged Eros: A Letter to the Youth', in Selected Writings of Alexandra Kollontai Allison & Busby, pp. 201-292.

C. Porter, (1980) Alexandra Kollontai: The Lonely Struggle of the Woman who defied Lenin, New York: Dutton Children's Books.

## **PSC\_6.2: INDIAN POLITICAL THOUGHT-II**

Course objective: Based on the study of individual thinkers, the course introduces a wide span of thinkers and themes that defines the modernity of Indian political thought. The objective is to study general themes that have been produced by thinkers from varied social and temporal contexts. Selected extracts from original texts are also given to discuss in the class. The list of additional readings is meant for teachers as well as the more interested students.

- Unit I: Rammohan Roy: Rights (4 lectures)**  
**Pandita Ramabai: Gender (4 lectures)**
- Unit II: Vivekananda: Ideal Society (5 lectures)**  
**Gandhi: Swaraj (5 lectures)**
- Unit III: Ambedkar: Social Justice (5 lectures)**  
**Tagore: Critique of Nationalism (4 lectures)**
- Unit IV: Iqbal: Community (5 lectures)**  
**Savarkar: Hindutva (4 lectures)**
- Unit V: Nehru: Secularism (4 lectures)**  
**Lohia: Socialism (4 lectures)**

### Reading List

#### **I. Introduction to Modern Indian Political Thought**

##### **Essential Readings:**

V. Mehta and T. Pantham (eds.), (2006) 'A Thematic Introduction to Political Ideas in Modern India: Thematic Explorations, History of Science, Philosophy and Culture in Indian civilization' Vol. 10, Part: 7, New Delhi: Sage Publications, pp. xxvii-ixi.

D. Dalton, (1982) 'Continuity of Innovation', in Indian Idea of Freedom: Political Thought of Swami Vivekananda, Aurobindo Ghose, Rabindranath Tagore and Mahatma Gandhi, Academic Press: Gurgaon, pp. 1-28.

#### **II. Rammohan Roy: Rights**

##### **Essential Readings:**

R. Roy, (1991) 'The Precepts of Jesus, the Guide to Peace and Happiness', S. Hay, (ed.) Sources of Indian Tradition, Vol. 2. Second Edition. New Delhi: Penguin, pp. 24-29.

C. Bayly, (2010) 'Rammohan and the Advent of Constitutional Liberalism in India 1800-1830', in Sh. Kapila (ed.), An intellectual History for India, New Delhi: Cambridge University Press, pp. 18-34.

T. Pantham, (1986) 'The Socio-Religious Thought of Rammohan Roy', in Th. Panthom and K. Deutsch, (eds.) Political Thought in Modern India, New Delhi: Sage, pp.32-52.

##### **Additional Reading:**

S. Sarkar, (1985) 'Rammohan Roy and the break With the Past', in A Critique on colonial India, Calcutta: Papyrus, pp. 1-17.

#### **III. Pandita Ramabai: Gender**

##### **Essential Readings:**

P. Ramabai, (2000) 'Woman's Place in Religion and Society', in M. Kosambi (ed.), Pandita Ramabai Through her Own Words: Selected Works, New Delhi: Oxford University Press, pp. 150-155.

M. Kosambi, (1988) 'Women's Emancipation and Equality: Pandita Ramabai's Contribution to Women's Cause', in Economic and Political Weekly, Vol. 23(44), pp. 38-49.

##### **Additional Reading:**

U. Chakravarti, (2007) *Pandita Ramabai - A Life and a Time*, New Delhi: Critical Quest, pp. 140.

G. Omvedt, (2008) 'Ramabai: Women in the Kingdom of God', in *Seeking Begumpura: The Social Vision of Anti Caste Intellectuals*, New Delhi: Navayana. pp. 205-224.

#### **IV. Vivekananda: Ideal Society**

##### **Essential Readings:**

S. Vivekananda, (2007) 'The Real and the Apparent Man', S. Bodhasarananda (ed.), *Selections from the Complete Works of Swami Vivekananda*, Kolkata: Advaita Ashrama, pp. 126-129.

A. Sen, (2003) 'Swami Vivekananda on History and Society', in Swami Vivekananda, Delhi: Oxford University Press, pp. 62- 79.

H. Rustav, (1998) 'Swami Vivekananda and the Ideal Society', in W. Radice (ed.), *Swami Vivekananda and the Modernisation of Hinduism*, Delhi: Oxford University Press, pp. 264- 280.

##### **Additional Reading:**

Raghuramaraju, (2007) 'Swami and Mahatma, Paradigms: State and Civil Society', in *Debates in Indian Philosophy: Classical, Colonial, and Contemporary*, Delhi: Oxford University Press, pp. 29-65.

#### **V. Gandhi: Swaraj**

##### **Essential Readings:**

M. Gandhi, (1991) 'Satyagraha: Transforming Unjust Relationships through the Power of the Soul', in S. Hay (ed.), *Sources of Indian Tradition*, Vol. 2. Second Edition, New Delhi: Penguin, pp. 265-270.

A. Parel, (ed.), (2002) 'Introduction', in *Gandhi, freedom and Self Rule*, Delhi: Vistaar Publication.

D. Dalton, (1982) *Indian Idea of Freedom: Political Thought of Swami Vivekananda, Aurobindo Ghose, Mahatma Gandhi and Rabindranath Tagore*, Gurgaon: The Academic Press, pp. 154- 190.

##### **Additional Reading:**

R. Terchek, (2002) 'Gandhian Autonomy in Late Modern World', in A. Parel (ed.), *Gandhi, Freedom and Self Rule*. Delhi: Sage.

#### **VI. Ambedkar: Social Justice**

##### **Essential Readings:**

B. Ambedkar, (1991) 'Constituent Assembly Debates', S. Hay (ed.), *Sources of Indian Tradition*, Vol. 2, Second Edition, New Delhi: Penguin, pp. 342-347.

V. Rodrigues, (2007) 'Good society, Rights, Democracy Socialism', in S. Thorat and Aryama (eds.), *Ambedkar in Retrospect - Essays on Economics, Politics and Society*, Jaipur: IIDS and Rawat Publications.

B. Mungekar, (2007) 'Quest for Democratic Socialism', in S. Thorat, and Aryana (eds.), *Ambedkar in Retrospect - Essays on Economics, Politics and Society*, Jaipur: IIDS and Rawat Publications, pp. 121-142.

##### **Additional Reading:**

P. Chatterjee, (2005) 'Ambedkar and the Troubled times of Citizenship', in V. Mehta and Th. Pantham (eds.), *Political ideas in modern India: Thematic Explorations*, New Delhi: Sage, pp. 73-92.

#### **VII. Tagore: Critique of Nationalism**

##### **Essential Readings:**

R. Tagore, (1994) 'The Nation', S. Das (ed.), *The English Writings of Rabindranath Tagore*, Vol. 3, New Delhi: Sahitya Akademi, pp. 548-551.

R. Chakravarty, (1986) 'Tagore, Politics and Beyond', in Th. Panthams and K. Deutsch (eds.), *Political Thought in Modern India*, New Delhi: Sage, pp. 177-191.

M. Radhakrishnan, and Debasmita, (2003) 'Nationalism is a Great Menace: Tagore and Nationalism' in



P. Hogan, Colm and L. Pandit, (eds.) Rabindranath Tagore: Universality and Tradition, London: Rosemont Publishing and Printing Corporation, pp. 29-39.

**Additional Reading:**

A. Nandy, (1994) 'Rabindranath Tagore & Politics of Self', in *Illegitimacy of Nationalism*, Delhi: Oxford University Press, pp. 1-50.

**VIII. Iqbal: Community**

**Essential Readings:**

M. Iqbal, (1991) 'Speeches and Statements', in S. Hay (ed.), *Sources of Indian Tradition*, Vol. 2, Second Edition, New Delhi: Penguin, pp. 218-222.

A. Engineer, (1980) 'Iqbal's Reconstruction of Religious Thought in Islam', in *Social Scientist*, Vol.8 (8), pp. 52-63.

Madani, (2005) *Composite Nationalism and Islam*, New Delhi: Manohar, pp. 66-91.

**Additional Reading:**

L. Gordon-Polonskya, (1971) 'Ideology of Muslim Nationalism', in H. Malik (ed.), *Iqbal: Poet/Philosopher of Pakistan*, New York: Columbia University Press, pp. 108-134.

**IX. Savarkar: Hindutva**

**Essential Readings:**

V. Savarkar, 'Hindutva is Different from Hinduism', available at <http://www.savarkar.org/en/hindutva/essentials-hindutva/hindutva-different-hinduism>, Accessed: 19.04.2013

J. Sharma, (2003) *Hindutva: Exploring the Idea of Hindu Nationalism*, Delhi: Penguin, pp. 124-172.

**Additional Reading:**

Dh. Keer, (1966) *Veer Savarkar*, Bombay: Popular Prakashan, pp. 223-250.

**X. Nehru: Secularism**

**Essential Readings:**

J. Nehru, (1991) 'Selected Works', in S. Hay (ed.), *Sources of Indian Tradition*, Vol. 2, Second Edition, New Delhi: Penguin, pp. 317-319.

R. Pillai, (1986) 'Political thought of Jawaharlal Nehru', in Th. Pantham, and K. Deutsch (eds.), *Political Thought in Modern India*, New Delhi: Sage, pp. 260-274.

B. Zachariah, (2004) *Nehru*, London: Routledge Historical Biographies, pp. 169-213.

**Additional Reading:**

P. Chatterjee, (1986) 'The Moment of Arrival: Nehru and the Passive Revolution', in *Nationalist Thought and the Colonial World: A Derivative Discourse?* London: Zed Books, pp. 131-166

**XI. Lohia: Socialism**

**Essential Readings:**

M. Anees and V. Dixit (eds.), (1984) *Lohia: Many Faceted Personality*, Rammanohar Lohia Smarak Smriti.

S. Sinha, (2010) 'Lohia's Socialism: An underdog's perspective', in *Economic and Political Weekly*, Vol. XLV (40) pp. 51-55.

A. Kumar, (2010) 'Understanding Lohia's Political Sociology: Intersectionality of Caste, Class, Gender and Language Issue', in *Economic and Political Weekly*, Vol. XLV (40), pp. 64-70.

## Discipline Specific Elective

### **PSD 6.3: UNDERSTANDING NORTH EAST INDIA**

#### **Unit: I**

**North-East: Geographical, Economic, Social and Cultural Features, Importance of North East India.**

#### **Unit: II**

**Traditional Political Institutions of Nagaland, Mizoram and Meghalaya.**

#### **Unit: III**

**Colonialism and Christianity in North East India**

#### **Unit: IV**

**Reorganisation of States in North-East in Post Independence Period**

#### **Unit: V**

**Contemporary Issues and Challenges in North-East India: Ethnicity, Separatist Movement and Underdevelopment**

#### **Essential Readings:**

1. Andre Gunder Frank, *The development of Underdevelopment*, New England Free Press, University of Texas
2. B.P. Sing, *The Problem of Change: A study of North-East India*, 1996, Oxford University Press
3. Gerin Phukon (ed.) *Political Dynamics of North East India*, South Asian Publisher 2000
4. Jaideep Saikia, *Frontiers in Flames: North-East India in Turmoil*, Viking, New Delhi, 2007
5. Ray, B. Datta and S.P. Agarwal, *Reorganisation of North-East India since 1974*, Concept Publishing Company, 1996
6. Sajal Nag, *Contesting Marginality: Ethnicity, Insurgency and Sub nationalism in North-East India*, Manohar Publishers and Distributors, 2002
7. Sajal Nag, *Roots of Ethnic Conflict: Nationality Question in North-East India*, Mahohar Publishers and Distributors (1<sup>st</sup> edition July 1, 1990)
8. Sanjib Baruah, *Ethnonationalism in India*, Oxford University Press, 2010
9. Sanjib Baruah, *Beyond Counter-Insurgency: Breaking the Impasse in North-East India*, Oxford University Press, USA (July 15, 2009)
10. Udayon Misra, *Nation Building and Development in North-East India*, Purbanchal Prakash Guwahati
11. V.Venkata Rao and Niru Hazarika, "A century of government and politics in North East India 1874-1980", Vol.I, S. Chand, 19
12. Asoso Yonuo, *The Rising Nagas*, Manas Publication, Delhi, 1984.
13. Abraham Lotha, *The Hornbill Spirit: Nagas Living Their Nationalism*, Heritage Publishing House, Dimapur, 2016.
14. Jelle J.P. Wouters, *In The Shadow of Naga Insurgency: Tribes, State and violence in North East India*, Oxford University Press, 2018.
15. Sing Chandrika, *Nagaland Politics: A Critical Account*, New Delhi; Mittal Publications, 2004
16. S. K. Chaube, *Hill Politics in North East India*, Orient Blackswan, 2012

## **PSD 6.4: UNDERSTANDING SOUTH ASIA**

Course Objective: The course introduces the historical legacies and geopolitics of South Asia as a region. It imparts an understanding of political regime types as well as the socio- economic issues of the region in a comparative framework. The course also appraises students of the common challenges and the strategies deployed to deal with them by countries in South Asia.

### **Unit-I: South Asia- Understanding South Asia as a Region (9 Lectures)**

- (a) Historical and Colonial Legacies (b) Geopolitics of South Asia

### **Unit-II: Politics and Governance (10 Lectures)**

Regime types: democracy, authoritarianism, monarchy

### **Unit-III: Emerging constitutional practices: (11 Lectures)**

Federal experiments in Pakistan; constitutional debate in Nepal and Bhutan; devolution debate in Sri Lanka

### **Unit-IV: Socio-Economic Issues (15 Lectures)**

Identity politics and economic deprivation: challenges and impacts (case studies of Pakistan, Bangladesh, Nepal, Sri Lanka)

### **Unit-V: Regional Issues and Challenges (15 Lectures)**

- (a) South Asian Association for Regional Cooperation (SAARC): problems and prospects  
(b) Terrorism (c) Migration

#### Essential Readings

#### **I. South Asia- Understanding South Asia as a Region**

Hewitt, V. (1992) 'Introduction', in *The International Politics of South Asia*. Manchester: Manchester University Press, pp.1-10.

Hewitt, V. (2010) 'International Politics of South Asia' in Brass, P. (ed.) *Routledge Handbook of South Asian Politics*. London: Routledge, pp.399-418.

Muni, S.D. (2003) 'South Asia as a Region', *South Asian Journal*, 1(1), August-September, pp. 1-6

Baxter, C. (ed.) (1986) *The Government and Politics of South Asia*. London: Oxford University Press, pp.376-394.

Baxter, C. (2010) 'Introduction', Brass, P. (ed.) *Routledge Handbook of South Asian Politics*. London: Routledge, pp.1-24 II. Politics and Governance

Wilson, J. (2003) 'Sri Lanka: Ethnic Strife and the Politics of Space', in Coakley, J. (ed.) *The Territorial Management of Ethnic Conflict*. Oregon: Frank Cass, pp. 173-193.

Mendis, D. (2008) 'South Asian Democracies in Transition', in Mendis, D. (ed.) *Electoral Processes and Governance in South Asia*. New Delhi: Sage, pp.15-52.

Subramanyam, K. (2001) 'Military and Governance in South Asia', in V.A (ed.) *Problems of Governance in South Asia*. New Delhi: Centre for Policy Research & Konark Publishing House, pp.201-208.

Hachethi, K. and Gellner, D.N.(2010) 'Nepal : Trajectories of Democracy and Restructuring of the State', in Brass, P. (ed.) *Routledge Handbook of South Asian Politics*. London: Routledge, pp. 131-146.

Kukreja, V. 2011. 'Federalism in Pakistan', in Saxena R. (ed.) *Varieties of Federal Governance*. New Delhi: Foundation Books, pp. 104-130.

Jha, N.K. (2008) 'Domestic Turbulence in Nepal: Origin, Dimensions and India's Policy Options', in Kukreja, V. and Singh, M.P. (eds.) *Democracy, Development and Discontent in South Asia*. New Delhi: Sage, pp. 264-281.

Burki, S.J. (2010) 'Pakistan's Politics and its Economy', in Brass, P. (ed.) *Routledge Handbook of South Asian Politics*. London: Routledge, pp. 83-97.

Kaul, N. (2008) 'Bearing Better Witness in Bhutan', *Economic and Political Weekly*, 13 September, pp. 67-69. III. Socio-Economic Issues

Phadnis, U. (1986) 'Ethnic Conflicts in South Asian States', in Muni, S.D. et.al. (eds.) *Domestic Conflicts in South Asia : Political, Economic and Ethnic Dimensions*. Vol. 2. New Delhi: South Asian Publishers, pp.100-119.

Kukreja, V. (2003) *Contemporary Pakistan*. New Delhi: Sage, pp. 75-111 and 112-153. IV. Regional Issues and Challenges

Narayan, S. (2010) 'SAARC and South Asia Economic Integration', in Muni, S.D. (ed.) *Emerging dimensions of SAARC*. New Delhi: Foundation Books, pp. 32-50.

Muni, S.D. and Jetley, R. (2010) 'SAARC prospects: the Changing Dimensions', in Muni, S.D. (ed.) *Emerging dimensions of SAARC*. New Delhi: Foundation Books, pp. 1-31.

Baral, L.R. (2006) 'Responding to Terrorism: Political and Social Consequences in South Asia', in Muni, S.D. (ed.) *Responding to terrorism in South Asia*. New Delhi: Manohar, pp.301-332.

Hoyt, T.D. (2005) 'The War on Terrorism: Implications for South Asia', in Hagerty, D.T. (ed.) *South Asia in World Politics*. Lanham: Roman and Littlefield Publishers, pp.281-295.

Lama, M. (2003) 'Poverty, Migration and Conflict: Challenges to Human Security in South Asia', in Chari, P.R. and Gupta, S. (eds.) *Human Security in South Asia: Gender, Energy, Migration and Globalisation*. New Delhi: Social Science Press, pp. 124-144

Acharya, J. and Bose, T.K. (2001) 'The New Search for a Durable Solution for Refugees: South Asia', in Samaddar, S. and Reifeld, H. (eds.) *Peace as Process: Reconciliation and Conflict Resolution in South Asia*. New Delhi: Vedams ,pp-137-157 Additional Readings

Rizvi, G. (1993) *South Asia in a Changing International Order*. New Delhi: Sage.

Thakur, R. and Wiggin, O.(ed.) (2005) *South Asia and the world*. New Delhi: Bookwell. Hagerty, D.T. (ed.) (2005) *South Asia in World Politics*, Oxford: Rowman and Littlefield.

Samaddar, R. (2002) 'Protecting the Victims of Forced Migration: Mixed Flows and Massive

Flows', in Makenkemp, M. Tongern, P.V. and Van De Veen, H. (eds.) *Searching for Peace in Central and South Asia*. London: Lynne Rienner. Kukreja, V. and Singh, M.P. (eds) (2008) *Democracy, Development and Discontent in South Asia*. New Delhi: Sage.

# **Choice Based Credit System (CBCS)**

**St. Joseph's College (Autonomous), Jakhama**

**DEPARTMENT OF SOCIOLOGY**

**UNDERGRADUATE PROGRAMME**

## **Preamble**

The University Grants Commission (UGC) has initiated several measures to bring equity, efficiency and excellence in the Higher Education System of country. The important measures taken to enhance academic standards and quality in higher education include innovation and improvements in curriculum, teaching-learning process, examination and evaluation systems, besides governance and other matters.

The UGC has formulated various regulations and guidelines from time to time to improve the higher education system and maintain minimum standards and quality across the Higher Educational Institutions (HEIs) in India. The academic reforms recommended by the UGC in the recent past have led to overall improvement in the higher education system. However, due to lot of diversity in the system of higher education, there are multiple approaches followed by universities towards examination, evaluation and grading system. While the HEIs must have the flexibility and freedom in designing the examination and evaluation methods that best fits the curriculum, syllabi and teaching-learning methods, there is a need to devise a sensible system for awarding the grades based on the performance of students. Presently the performance of the students is reported using the conventional system of marks secured in the examinations or grades or both. The conversion from marks to letter grades and the letter grades used vary widely across the HEIs in the country. This creates difficulty for the academia and the employers to understand and infer the performance of the students graduating from different universities and colleges based on grades.

The grading system is considered to be better than the conventional marks system and hence it has been followed in the top institutions in India and abroad. So it is desirable to introduce uniform grading system. This will facilitate student mobility across institutions within and across countries and also enable potential employers to assess the performance of students. To bring in the desired uniformity, in grading system and method for computing the cumulative grade point average (CGPA) based on the performance of students in the examinations, the UGC has formulated these guidelines.

## Details of courses under B.A (Honors)

### Course \*Credits

Theory

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<b>I. Core Course</b> <b>(14 Papers)</b>	14X6= 84
<b>II. Elective Course</b> Discipline Specific Elective (DSE) <b>(4 Papers)</b>	4X6=24
Generic Elective/ Interdisciplinary	4X4=16
<b>• Optional Dissertation or project work in place of one Discipline Specific Elective paper (6 credits) in 6<sup>th</sup> Semester</b>	
<b>III. Ability Enhancement Courses</b>	
<b>1. Ability Enhancement Compulsory</b> <b>(2 Papers of 2 credit each)</b>	2 X 2=4
Environmental Studies English/MIL Communication	
<b>2. Skilled Enhancement Elective (Skill Based)</b> (Minimum 2) <b>(2 Papers of 2 credits each)</b>	2 X 2=4
<b>Total Credits</b>	<hr/> <b>140</b>

**Institute should evolve a system/ policy about ECA/ General Interest/ Hobby/ Sport/ NCC/NSS/ Related courses on its own.**

**Wherever there is a practical there will be no tutorial and vice-versa.**

## BA (Honours) Sociology Under CBCS

### Contents

S. No	Name of the Course	Page Number
	<b>Core Courses</b>	
C 01	Introduction to Sociology	
C 02	Sociology In India I	
C 03	Social Change	
C 04	Sociology of India II	
C 05	Political Sociology	
C 06	Sociology of Religion	
C 07	Sociology of Gender	
C 08	Economic Sociology	
C 09	Sociology of Kinship	
C 10	Social Stratification	
C 11	Sociological Thinkers I	
C 12	Sociological Research Methods I	
C 13	Sociological Thinkers II	
C 14	Sociological Research Methods II	
	<b>Discipline Specific Electives (DSE)</b>	
DSE 01	Urban Sociology	
DSE 02	Environmental Sociology	
DSE 03	Indian Sociological Traditions	
DSE 04	Reading Ethnographies	
	<b>Generic Electives (GE)</b>	
GE 01	Indian Society: Images and Realities	
GE 02	Gender and Violence	
GE 03	Sociology of Social Movements	
GE 04	Population and Society	
	<b>Skilled Enhancement Course</b>	
SEC 01	Reading, Writing and Reasoning for Sociology	
SEC 02	Techniques of Ethnographic Film Making	



## SOCIOLOGY HONOURS

Semester	Core Course (C)	Ability Enhancement Course (A)	Skilled Enhancement Course (S)	Discipline Specific Elective (D)	Generic Elective (G)
First	SOC 1.1 Introduction to Sociology	EGA 1.3 English Communication			SOG 1.4 Indian Society: Images and Realities
	SOC 1.2 Sociology In India I				
Second	SOC 2.1 Social Change	ESA 2.3 Environmental Studies			SOG 2.4 Gender and Violence
	SOC 2.2 Sociology of India II				
Third	SOC 3.1 Political Sociology		SOS 3.4 Reading, Writing and Reasoning for Sociology		SOG 3.5 Sociology of Social Movements
	SOC 3.2 Sociology of Religion				
	SOC 3.3 Sociology of Gender				
Fourth	SOC 4.1 Economic Sociology		SOS 4.4 Techniques of Ethnographic Film Making		SOG 4.5 Population and Society
	SOC 4.2 Sociology of Kinship				
	SOC 4.3 Social Stratification				
Fifth	SOC 5.1 Sociological Thinkers I			SOD 5.3 Urban Sociology	
	SOC 5.2 Sociological Research Methods I			SOD 5.4 Environmental Sociology	
Sixth	SOC 6.1 Sociological Thinkers II			SOD 6.3 Indian Sociological Traditions	
	SOC 6.2 Sociological Research Methods II			SOD 6.4 Reading Ethnographies	
No. of Courses	14 (84)	2 (4)	2 (4)	4 (24)	4(24)

## CORE COURSE

### SOC 1.1 INTRODUCTION TO SOCIOLOGY

#### Course Objective:

The mandate of the course is to introduce the discipline to students from diverse trainings and capabilities. The course is intended to introduce the students to a sociological way of thinking. It also provides a foundation for the other more detailed and specialized courses in sociology.

#### Outline:

1. **Sociology as a Discipline**
  - a. Meaning and origin of Sociology
  - b. Nature, Scope and Significance of Sociology
2. **Sociology and Other Social Sciences**
  - a. Sociology and Social Anthropology
  - b. Sociology & Psychology
  - c. Sociology & History
3. **Basic Concepts**
  - a. Community, Group, Norms, Values, Folkways and Mores, Status and roles
  - b. Culture and Society
4. **Social Change**
  - a. Meaning and Nature
  - b. Theories of Social Change
  - c. Factors of Social Change
5. **Social Institutions**
  - a. Marriage and Kinship
  - b. Family
  - c. Religion

#### Essential Readings

1. Johnson, Harry M, 1995, *Sociology: A Systematic Introduction*, New Delhi, Allied Publishers
2. Inkeles, Alex; 2003; *What is Sociology? An Introduction to the Discipline and Profession*; New Delhi; Prentice Hall of India Private Limited.
3. Kikhi, Kedilezo et.al; 2010: *Introduction to Sociology*; Dimapur; Heritage Publishing House
4. Haralambos, M; 1991; *Sociology, Themes and Perspectives*; New Delhi; Oxford University Press.
5. Bêteille, André, 1985, *Six Essays in Comparative Sociology*, New Delhi: Oxford University Press, Chapter 1, 'Sociology and Social Anthropology', Pp. 1- 20
6. Beteille, André, 2002, *Sociology: Essays in Approach & Method*, Oxford University Press, Chapter 2, 'Sociology and Social Anthropology', Pp. 28-54
7. Bottomore, T. B. 1971, *Sociology: A Guide to Problems and Literature*, London: Allen and Unwin. Chapter 4, 'The Social Sciences, History and Philosophy', Pp. 65-80 Beattie, J., 1966, *Other Cultures*, London R.K.P., Chapter 2, 'Social Anthropology
8. Burke, Peter, 1980, *Sociology and History*, George Allen and Unwin, Chapter 1, 'Sociologists and Historians', Pp. 13-30
9. Jonathan H; 1994; *Sociology: Concepts and Uses*; New York; McGraw Hill Inc Jayaram, N; 1990; *Introducing Sociology*; New Delhi; MacMillan India Ltd. MacIver,
10. Sharma, R.N; 1982; *Principles of Sociology*; London; J.K. Publishers.
11. Bierstedt, Robert 1974, *The Social Order*, McGraw Hill, Chapter 20, 'The Problem of Social Change' Pp. 527-5

## **SOC 1.2: SOCIOLOGY OF INDIA**

### **Course objectives**

This paper introduces the processes and modes of construction of knowledge of India. Further, it aims to draw attention to the key concepts and institutions which are useful for the understanding of Indian society.

### **Outline:**

- 1. India: An Object of Knowledge**
  - a. The Colonial Discourse
  - b. The Nationalist Discourse
  - c. The Subaltern Critique
  
- 2. Caste System**
  - a. Concept; Nature and Characteristics
  - b. Critique of Caste
  
- 3. Indian Social Institutions**
  - a. Kinship; South Zone and North Zone
  - b. Religion; Hinduism, Islam, Christianity, Jainism, Buddhism
  - c. Society
  
- 4. Tribe**
  - a. Meaning and Definition
  - b. Characteristics
  
- 5. Concept of Indian Society**
  - a. Agrarian Classes
  - b. Industry and Labour

### **Essential Readings**

1. Breman, J., 1999, "The Study of Industrial Labour in Post Colonial India: The Formal Sector", *Contributions to Indian Sociology*, 33(1&2), Pp.1-4
2. Cohn, B.S., 1990, *An Anthropologist among the Historians and Other Essays*, Delhi: Oxford University Press, Pp.136-171
3. Dhanagare, D.N., 1991, "The Model of Agrarian Classes in India", in D. Gupta (ed.), *Social Stratification*, Delhi: Oxford University Press, Pp. 271-275
4. Guha, R., 1982, *Subaltern Studies, Volume I*. Delhi: Oxford University Press, Pp.1-8
5. Kaviraj, S., 2010, *The Imaginary Institution of India*, Ranikhet: Permanent Black, Pp.85-126
6. Haimendorf, C. V. F., 1967, "The Position of Tribal Population in India", in Mason *India and Ceylon: Unity and Diversity*, New York: Oxford University Press, Chapter 9
7. Mencher, J., 1991, "The Caste System Upside Down", in D. Gupta (ed.), *Social Stratification*, Delhi: Oxford University Press, Pp.93-109
9. Srinivas, M.N., 1969, "The Caste System in India", in A. Béteille (ed.) *Social Inequality: Selected Readings*, Harmondsworth: Penguin Books, Pp.265-272

### **Note:**

The students are required to explore the contemporary sources on social institutions. With the aid of visual, oral and other kinds of narratives/representations students, advised and guided by teachers, are expected to arrange discussion sessions, work on assignments, undertake projects and fieldwork, and make presentations week-wise from the onset to the end of the semester.

## **SOC 2.1: SOCIAL CHANGE**

### **Course Objectives:**

This course looks at social change from a sociological perspective. It introduces the contexts and concepts of social change and attempts to theoretically locate them through concrete case studies.

### **Outline:**

- 1. Concept of Social Change**
  - a. Characteristics
  - b. Classifications
  
- 2. Factors of Social Change**
  - a. Technological
  - b. Cultural and Ideological
  
- 3. Theories of Social Change**
  - a. Linear: Spencer, Cyclical: Pareto, Fluctuation: Sorokin
  - b. Conflict: Marx
  
- 4. Social Mobility**
  - a. Types of Social Mobility
  - b. Functions of Social Mobility
  
- 5. Emerging Trend**
  - a. Sanskritization
  - b. Modernization and Secularization

### **Essential Readings**

1. Bourdieu pierre '*Cultural Reproduction And Social Reproduction*' In the structure of schooling: Reading in the sociology of education. Richard Arum and Irene Beattie. Editors. NY: McGraw Hill.1973:56-68.
2. Bottero. Wendy. *Stratification*. London:Routledge 2005. Chapter 12 &14 pp.205-223 &246-258
3. Bierstedt Robert 1974. *The social order*. McGraw Hill. Chapter 20.'The problem of social change' pp. 527-567
4. Srinivas. M.N. 1987. *The Dominant Caste and Other Essays*. Delhi: Oxford University Press. pp.20-59
5. Srinivas.M.N. 1956. *A Note on Sanskritization and Westernization*'. The Far Eastern Quarterly.15(4).pp. 481-496

## SOC 2.2: Sociology of India – II

### Course Objective:

This paper aims to draw attention to the variety of ideas and debates about India. Further, it critically engages with the multiple socio-political forces and ideologies which shape the terrain of the nation.

### Outline:

1. **Ideas of India**
  - a. Gandhi and Ambedkar
  - b. Indological and Ethnographic Approaches
2. **Resistance**
  - a. Dalit Politics
  - b. Ethnic Movements
3. **Movements**
  - a. Women's Movement
  - b. Peasant Movements
4. **Change**
  - a. Middle Class Phenomenon
  - b. E-generation
5. **Challenges to Civilization, State and Society**
  - a. Communalism
  - b. Secularism
  - c. Nation-building

### Essential Reading

1. Ambedkar, B. R., 1971 [1936], *Annihilation of Caste*, Jullunder: Bheem Patrika
2. Uberoi, P. et al., 2007, 'Introduction: The Professionalization of Indian Anthropology and Sociology: Peoples, Places and Institutions' in P. Uberoi et al (eds.) *Anthropology in the East: Founders of Indian Sociology and Anthropology*, New Delhi: Permanent Black, Pp. 1-63
3. Dumont, L. and D. Pocock, 1957, 'For a Sociology of India', *Contributions to Indian Sociology*, 1, Pp.7-22
4. Shah, G., 2001, *Dalit Identity and Politics*, New Delhi: Sage Publications, Pp.17-43
5. Srinivas, M.N., 1956, 'A Note on Sanskritization and Westernization', *The Far Eastern Quarterly*, 15(4), Pp. 481-496
6. Menon, N., (ed.) 1999, *Gender and Politics in India*, Delhi: Oxford University Press, pp.342-369.
7. Pouchepadass, J., 1980, 'Peasant Classes in Twentieth Century Agrarian Movements in India', in E. Hobsbawm (ed.) *Peasants in History*, Delhi: Oxford University Press, Pp.136-155
8. Baruah, S., 2010, 'The Assam Movement' in T.K. Oommen (ed.) *Social Movements I: Issues of Identity*. Delhi: Oxford University Press, Pp.191-208
9. Deshpande, S., 2003, *Contemporary India: A Sociological View*, New Delhi: Penguin Books, Pp.125-150
10. Dumont, L., 1997, *Religion, Politics and History in India*, Paris: Mouton,
11. Kumar, R., 1986, 'The Varieties of Secular Experience', in *Essays in the Social History of Modern India*, Calcutta: Oxford University Press, Pp.31-46
12. Madan, T.N., 1997, *Modern Myths, Locked Minds*, Delhi: Oxford University Press, Pp.233-265
13. Oommen, T. K., 1997, *Citizenship and National identity: From Colonialism to Globalism*. New Delhi: Sage Publications, pp.143-172.

## SOC 3.1: POLITICAL SOCIOLOGY

### Course Objective:

This course introduces the students to some major theoretical debates and concepts in Political Sociology, while situating these within contemporary political issues. A key thrust of the paper is towards developing a comparative understanding of political relationships through themes such as power, governance and state and society relationships.

### Outline:

#### 1. Contextualizing the study of Politics

- a. Meaning and Scope
- b. Development of Political Sociology

#### 1. Basic Concepts

- a. Power
- b. Authority

#### 2. State

- a. Governance
- b. Citizenship

#### 3. Political System

- a. Segmentary
- b. Totalitarians and Democratic

#### 4. Everyday State and Local Structure of Power

- a. State
- b. Local Structure; Village Panchayats, VDB's

### Essential Readings:

1. Burchell, Graham et al (Eds), 1991, *The Foucault Effect: Studies in Governmentality*, The University of Chicago Press, Chapter 1, pp.1-51
2. Bottomore, T.B. 1993, *Elites and Society, 2nd Edition*, Routledge, pp. 15-34
3. Eisenstadt, S. N. '1971, 'General Introduction : The Scope and Development of Political Sociology' in *Political Sociology: A Reader* Basic Books, New Your Publication, pp 3-24.
4. Fortes, M. and E.E. Evans Pritchard (Eds), 1940. *African Political Systems*. London: Oxford University Press, Chapter 8.
5. Lewellen, Ted. 2003, 'The Development of Political Anthropology' in *Political Anthropology: An Introduction (Third Edition)*, Praeger, pp. 1- 14.
6. Lukes, Steven. 2005, *Power: A Radical View*, 2nd Ed., Hampshire: Palgrave, pp. 14-44
7. Mills, C. Wright, 1956. *The Power Elite, New Edition*, OUP, pp. 269-297.
8. Mitchell, Timothy. 'Society, Economy, and the State Effect', in A. Sharma and A. Gupta (Ed.), *The Anthropology of the State: A Reader*, Oxford: Blackwell, 2006, pp. 169-85
9. Tapper, Richard, 1990. 'Anthropologists, Historians, and Tribespeople' in Philip Shukry and Joseph Kostiner (Ed) *Tribes*
10. Tilly, Charles. 1999, 'Where Do Rights Come From?' in Theda Skocpol (Ed) *Democracy, Revolution and History*, Cornell University Press, pp 55-72
11. Weber, Max. 1978, *Economy and Society: An Outline of Interpretative Sociology*, Berkeley: University of California Press, pp. 53-54; 941-54; 212-30; 241-54.

## **Soc 3.2: Sociology of Religion**

### **Course Objective**

The course lays primacy to the understanding of religious over individual religions. Drawing heavily from classical writings on the subject it reinforces importance of the positions developed in these texts. Implicitly numerous interconnections can be attempted between various themes, manifestly the overarching concern of the paper is to follow up the linkage between social and religious through different registers mentioned in the outline.

### **Outline:**

- 1. Formulating Religion**
  - a. Concept
  - b. Importance
- 2. Types of Religion**
  - a. Totemism and Animism,
  - b. Atheism, Monotheism and Polytheism
- 3. Sociological perspectives on religion:**
  - a. Durkheim: Sacred and Profane
  - b. Marx: Religion as Ideological Weapon
  - c. Weber: Religious Ethics and Economy
- 4. Elements of Religion**
  - a. Sacred, Myth, Ritual
  - b. Meaning and Significance
- 5. Religion and Society: Contemporary Direction**
  - a. Religious Fundamentalism
  - b. Secularism and Communalism: Meaning, Characteristics
  - c. Religious Pluralism

### **Essential Readings**

1. Emile Durkheim. 1995. *The elementary forms of religious life*. Translated by Karen E. Fields. New York: The Free Press. Book one and Conclusion, pp. 21-39, 418-440.
2. Max Weber. 2001. *The Protestant ethic and the spirit of capitalism*. Translated by Stephen Kalberg. England: Roxbury Publishing Press, pp. 103-126.
3. Max Weber. 1978. *Economy and society*. Edited by Guenther Roth and Claus Wittich. California University of California Press. Volume Two, pp. 518-521.
4. Marx, Karl. 2008/9 [1843]. "On the Jewish Question" in *Deutsch-Französische Jahrbücher*. Proofed and Corrected: by Andy Blunden, Matthew Grant and Matthew Carmody. www.marxists.
5. Malinowski, Bronislaw. 1948. *Magic, science and religion and other essays*. Selected, and with an introduction by Robert Redfield. Boston: The Free Press, pp. 37-50.
6. Emile Durkheim. 1995. *The elementary forms of religious life*. Translated by Karen E. Fields. New York: The Free Press, Book one, pp. 27-33.
7. Srinivas, M. N. 1952. *Religion and society among the Coorgs of south India*. Clarendon : Oxford, pp. 100-122.

## **SOC 3.3: Sociology of Gender**

### **Course Objective:**

The course introduces gender as a critical sociological lens of enquiry in relation to various social fields. It also interrogates the categories of gender, sex, and sexuality.

### **Outline:**

- 1. Gendering Sociology**
  - a. Concept and Types of Gender
  - b. Sociological Perspective on Gender
- 2. Gender as a Social Construct**
  - a. Sex and Gender
  - b. Gender Socialization; Production of Masculinity and Femininity
- 3. Gender: Differences and Inequalities**
  - a. Class, Caste
  - b. Family, Work and Property Rights
- 4. Gendered Institutions and Role of women**
  - a. The Family
  - b. The Workplace
  - c. Occupations and Status
- 5. Gender, Power and Resistance**
  - a. Power and Subordination
  - b. Resistance and Movements

### **Essential Readings**

1. S. Jackson and S. Scott (eds.) 2002 Gender: A Sociological Reader, London: Routledge. Introduction, (pp. 1-26)
2. Liz Stantley. 2002. 'Should Sex Really be Gender or Gender Really be Sex' in S. Jackson and S. Scott (eds.) Gender: A Sociological Reader, London: Routledge (pp. 31-41)
3. Sherry Ortner. 1974. "Is male to female as nature is to culture?" M.Z. Rosaldo and L. Lamphere (eds.) Women, culture and society. Stanford: Stanford University Press (pp. 67- 87).
4. Alter, Joseph. 1992. The Wrestler's Body: Identity and Ideology in North India. California : University of California: California (pp 163-194).
5. Walby, Sylvia. 2002. "Gender, Class and Stratification: Towards a new approach" in S. Jackson and S. Scott (eds.) Gender: A Sociological reader. London: Routledge (pp 93-96).
6. Palriwala, Rajni. 1999. "Negotiating Patriliney: Intra-household Consumption and Authority in Rajasthan (India)", in Rajni Palriwala and Carla Risseuw (eds.), Shifting Circles of Support: Contextualising kinship and gender relations in South Asia and Sub-Saharan Africa. Delhi: Sage Publications [pp.190-220]
7. Whitehead, A. 1981, "„I?m Hungry Mum?: The Politics of Domestic Budgeting" in K. Young et al. (eds.) Of Marriage and the Market: Women's Subordination Internationally and its Lessons. London: Routledge and Kegan Paul (pp. 93-116).
8. Susie, Tharu and Tejaswini Niranjana. 1999. „Problems for a contemporary theory of gender? in Nivedita Menon (ed.) Gender and Politics in India, New Delhi: Oxford University Press [pp 494-525].
9. Kumar, Radha. 1999. "From Chipko to Sati: The Contemporary Indian Women?s Movement" In Nivedita Menon (ed.) Gender and Politics in India. New Delhi: Oxford University Press [pp 342-369].  
[Projects, feature films and documentaries screenings, field-work oriented tasks will be the integral part of the course].



## **SOC 4.1: ECONOMIC SOCIOLOGY**

### **Course Objective:**

The course provides an understanding of the social and cultural bases of economic activity. It highlights the significance of sociological analysis for the study of economic processes in local and global contexts.

### **Outline:**

#### **1. Perspectives in Economic Sociology**

- a. Formalism and Substantivism
- b. New Economic Sociology

#### **2. Forms of Exchange**

- a. Reciprocity and Gift
- b. Exchange and Money

#### **3. Systems of Production, Circulation and Consumption**

- a. Hunting and Gathering
- b. Domestic Mode of Production
- c. Peasant
- d. Capitalism
- e. Socialism

#### **4. Economic Development**

- a. Stages
- b. Causes

#### **5. Some Contemporary Issues in Economic Sociology**

- a. E-commerce
- b. Globalisation

### **Essential Readings**

1. Baran, P. *The Political Economy of Growth*. NY: Monthly Review Press, 1957.
2. Durkheim, É. *The division of labour in society*. New York: Free Press, 1997.
3. Evans, P. B. *Embedded autonomy states and industrial transformation*. Princeton, NJ: Princeton University P, 1995.
4. Granovetter, M. "Economic action and social structure: The problem of embeddedness" in *American Journal of Sociology*. Vol. 91, pp. 481–510, 1985.
5. Harvey, D. *A Brief History of Neoliberalism*. Oxford: Oxford University Press. 2009.
6. Hoselitz, B.F. *Sociological Aspects of Economic Growth*. NY: The Free Press, 1960.
7. Marx, K. "Alienated Labour" in T.B. Bottomore (Ed.). *Karl Marx: Early Writings*, New York: McGraw Hill, 1963.
8. Marx, K. *Capital* (Vol. I). Moscow: Progress Publishers 1974.
9. Mauss, M. *The Gift*. London: Routledge, 2006.
10. Mitchell, T. 'Fixing the Economy' in *Cultural Studies*, 12(1), 1998.
11. Nash, M. *Primitive and Peasant Economic Systems*. California: Chandler, 1956.
12. Parsons, T. and N. Smelser. *Economy and Society*. London: Routledge, 2010.
13. Polanyi, K. *The Great Transformation*. Boston: Beacon Press. 2001.
14. Sahlins, M. *Culture and Practical Reason*. Chicago: University of Chicago P, (Chapter 4), 1976.
15. Smelser, N. J. and R. Swedberg. *The handbook of economic sociology*. Princeton, NJ: Princeton University P, 2005.
16. Weber, M. *Economy and society: An outline of interpretive sociology*. Berkeley: University of California P,

## SOC 4.2: SOCIOLOGY OF KINSHIP

### Course Objective:

This course aims to introduce general principles of kinship and marriage by reference to key terms and theoretical statements substantiated by ethnographies. The course looks at the trajectories and new directions in kinship studies.

### Outline:

#### 1: Introduction

- a. Meaning and Definition
- b. Significance of Kinship

#### 2: Key Terms

- a. Descent, Clan, Filiation
- b. Incest Taboo, Residence

#### 3: Approaches

- a. Descent
- b. Alliance
- c. Cultural

#### 4: Family and Marriage

- a. Changes in the Indian Family System
- b. Changes in the Marriage System in India.

#### 5: Recasting Kinship

- a. Kinship and Gender
- b. Re-imagining Families
- c. New Reproductive Technologies

### Essential Readings

1. Radcliffe-Brown, A. R. and D. Forde (eds.), 1950, *African Systems of Kinship and Marriage*, London: Oxford University Press, Introduction, Pp.1-39
2. Evans-Pritchard, E.E., 2004 (1940), 'The Nuer of Southern Sudan', in R. Parkin and L. Stone (eds.), *Kinship and Family: An Anthropological Reader*, U.S.A.: Blackwell, Pp. 64-78
3. Fortes, M., 1970, *Time and Social Structure and Other Essays*, University of London: The Athlone Press, Chapter 3, Pp. 67-95
4. Leach, Edmund, 1962, 'On Certain Unconsidered Aspects of Double Descent Systems', *Man*, Vol. 62, Pp. 130-134
5. Lévi-Strauss, Claude, 1969, *The Elementary Structures of Kinship*, London: Eyre and Spottiswoode, Chapters 1 & 2, Pp. 3-25
6. Dumont, L., 1968, 'Marriage Alliance', in D. Shills (ed.), *International Encyclopedia of the Social Sciences*, U.S.A.: Macmillan and Free Press, Pp. 19- 23
7. Shah, A.M., 1998, 'Changes in the Indian Family: An Examination of Some Assumptions', in *The Family in India: Critical Essays*, New Delhi: Orient Longman, Pp.52-63
8. Freeman, J. D., 1958, 'The Family Systems of the Iban of Borneo', in J. Goody (ed.), *The Developmental Cycle in Domestic Groups*, Cambridge: Cambridge University Press, Pp. 15-52
9. Leach, E.R., 1961, 'Polyandry, Inheritance and the Definition of Marriage with Particular Reference to Sinhalese Customary Law', in E. R. Leach (ed.), *Rethinking Anthropology*, London: The Athlone Press, Pp. 105-113
10. 10. Uberoi, Patricia, 1995, 'When is a Marriage not a Marriage? Sex, Sacrament and Contract in Hindu Marriage', *Contributions to Indian Sociology*, n.s. 29, 1&2: 319-45
11. 11. Gold, Ann Grodzins, 1994, 'Sexuality, Fertility, and Erotic Imagination in Rajasthani Women's Songs ', in *Listen to the Heron's Words: Re-imagining Gender and Kinship in North India* by Gloria Goodwin Raheja and Ann Grodzins Gold, Delhi: OUP, Pp 30-72

## **SOC 4.3: SOCIAL STRATIFICATION**

### **Course Objective:**

This course introduces students to Sociological Study of Social Inequalities. It acquaints students with principal theoretical perspectives on and diverse forms of Social inequality in articulation with each other.

### **Outline:**

#### **1: INTRODUCTION**

- a. Concept, Meaning and Characteristics
- b. Significance

#### **2: THEORIES**

- a. Functionalist Theory
- b. Conflict Theory

#### **3: FORMS OF SOCIAL STRATIFICATION**

- a. Slavery and Estates
- b. Caste and Class

#### **4: IDENTITIES AND INEQUALITIES**

- a. Race and Ethnicity
- b. Feminism and Gendered Stratification

#### **5: MOBILITY AND SOCIAL REPRODUCTION**

- a. Social Mobility and Types
- b. Cultural Reproduction and Social Reproduction

### **Essential readings**

1. Worsley, Peter. *Introducing Sociology*. 2<sup>nd</sup> ed. Harmondsworth: Penguin Books, 1970. Chapter 8, Social Stratification: Class, Status and Power, pp. 395 – 408
2. McLellan, David. *The Thought of Karl Marx*. London: Papermac, 1995. Part 2. Chapter 6. Class, pp. 182-194
3. Weber, Max, Hans Heinrich Gerth, and C. Wright Mills. *From Max Weber*. New York: Oxford University Press, 1946. Chapter VII, Class, Status, Party. Pp. 180 – 195
4. Bendix, R. 'Inequality and Social Structure: Comparison of Marx and Weber' *American Sociological Review*, Vol. 39, No. 2 (Apr., 1974), pp. 149-161
5. Bottomore, T. B. *Classes in Modern Society*. New York: Pantheon Books, 1966. Chapters. 2 & 3 The Nature of Social Class & Classes in Industrial Societies. 9-75
6. Davis, Kingsley, and Wilbert E. Moore. 'Some Principles of Stratification'. *American Sociological Review* 10.2 (1945): pp. 242-249
7. Tumin, Melvin M. 'Some Principles of Stratification: A Critical Analysis'. *American Sociological Review* 18.4 (1953): 387-394
8. Davis Kingsley and Wilbert E Moore 'Some Principles of Stratification: Critical Analysis: Reply'. *American Sociological Review* Vol. 18, No. 4 (Aug., 1953), pp. 394-397
9. Wrong, D.H, 'The Functional Theory of Stratification: Some Neglected Considerations' *American Sociological Review*, Vol. 24, No. 6 (Dec., 1959), pp. 772-78
10. Jain, Ravindra K. 'Hierarchy, Hegemony and Dominance: Politics of Ethnicity in Uttar Pradesh, 1995' *Economic and Political Weekly*, Vol. 31, No. 4 (Jan. 27, 1996), pp. 215-223
11. Omi, Michael, and Howard Winant. *Racial Formation in the United States*. New York: Routledge & Kegan Paul, 1986. Chapters 1 & 4, pp. 14-24 and 57-69
12. Mitchell, Juliet. *Woman's Estate*. Harmondsworth: Penguin, 1971. Chapter 5, Position of Women 1. Pp. 99-122
13. Acker, Joan. 'Women and Social Stratification: A Case of Intellectual Sexism'. *American Journal of Sociology* 78.4, 1973. Pp. 936-944
14. Bourdieu Pierre 'Cultural Reproduction and Social Reproduction' *In The Structure of Schooling: Readings in the Sociology of Education*. Richard Arum and Irene Beattie, Editors. NY: McGraw Hill. 1973: 56-68

## **SOC 5.1: SOCIOLOGICAL THINKERS I**

### **Objectives:**

The course introduces the students to the classics in the making of the discipline of sociology through selected texts by the major thinkers.

### **Outline:**

- 1: AUGUSTE COMTE**
  - a. Law of Human Progress
  - b. Social Static and Dynamic
  
- 2: HERBERT SPENCER**
  - a. Organic Analogy
  - b. Militant and Industrial Societies
  
- 3: KARL MARX**
  - a. Materialist Conception of History
  - b. Capitalist Mode of Production
  
- 4: MAX WEBER**
  - a. Social Action and Ideal Types
  - b. Religion and Economy
  
- 5: EMILE DURKHEIM**
  - a. Social Fact
  - b. Suicide

### **Essential readings**

1. Weber, Max. 1947. *The Theory of Social and Economic Organization*. New York: The Free Press, pp. 87-123
2. Weber, Max. 2002. *The Protestant Ethic and the Spirit of Capitalism* (translated by Stephen Kalberg). London: Blackwell Publishers, pp. 3-54, 103-126, Chapters I, II, III, IV & V
3. Gane, Mike. 1992. *The Radical Sociology of Durkheim and Mauss*. London: Routledge. Pages: 1-10
4. Durkheim, E. 1958. *The Rules of Sociological Method*. New York: The Free Press. pp. 48-107, 119-144
5. Durkheim, E. 1951. *Suicide: A Study in Sociology*. New York: The Free Press, pp. 41-56, 145-276
6. Ritzer, G. 1996. *Sociological Theory*. New York: McGraw Hill Companies.
7. Giddens, A. 1971. *Capitalism and Modern Social Theory: An Analysis of the Writings of Marx, Durkheim and Max Weber*. Cambridge: Cambridge University Press.

## **SOC 5.2: SOCIOLOGICAL RESEARCH METHODS I**

**Course Objective:** The course is a general introduction to the methodologies of sociological research methods. It will provide the student with some elementary knowledge of the complexities and philosophical underpinnings of research.

### **Outline:**

- 1. Conceptual Aspects**
  - a. Meaning and Scope
  - b. Characteristics of Social Research
- 2. Nature and Process**
  - a. Steps in Scientific Research
  - b. Ethical Issues in Social Research
- 3. Hypothesis**
  - a. Meaning and Types
  - b. Formulation of Hypothesis
- 4. Research Design and Sampling**
  - a. Formation of Research Design
  - b. Sampling Techniques
- 5. Techniques of Data Collection**
  - a. Sources of Data: Primary and Secondary
  - b. Research Tools: Observation, Schedule, Questionnaire and Interview

### **Essential Readings**

1. Ahuja, Ram; 2009; *Research Methods*; Jaipur; Rawat Publications.
2. Beteille, A. and T. N. Madan; 1975; *Encounters and Experience: Personal Accounts of Fieldwork*; New Delhi; Vikas Publishing House.
3. Cauvery, R et.al; 2003; *Research Methodology*; New Delhi; S. Chand and Company Ltd.
4. Dooley, David; 2007; *Social Research Methods* (Fourth edition); New Delhi; Prentice Hall of India.
5. Ghosh, B. N; 1985; *Scientific Methods and Social Research*; New Delhi; Sterling Publishers Pvt. Ltd.
6. Goode, William J. and Paul K. Hatt; 1987; *Methods in Social Research*; London: Mc Graw Hill Books Company
7. Kothari, C.R; 2005; *Research Methodology. Methods and Techniques*; New Delhi; New Age International (P) Limited Publishers.
8. Kumar, Ranjit; 1999; *Research Methodology: A step by Step Guide for Beginners*; New Delhi; Sage Publications.
9. Misra, R.P; 2001; *Research Methodology: A Hand Book*; New Delhi; Concept Publishing Company.
10. Punch, Keith F; 2005; *Introduction to Social Research: Quantitative and Qualitative Approaches* (Second edition); New Delhi; Sage publications.
11. Young, P.V; 1988; *Scientific Social Surveys and Research*; New Delhi; Prentice Hall of India.

## **SOC 6.1: SOCIOLOGICAL THINKERS II**

**Course Objective:** To introduce students to post-classical sociological thinking through some original texts.

### **Outline:**

- 1. Talcott Parsons**
  - a. Pattern variables
  - b. Theory of Social Action
  
- 2. Claude Levi-Strauss**
  - a. Structuralism
  - b. Theory of Myth
  
- 3. G. H. Mead**
  - a. Mind, Self and Society
  - b. Theory of Perspective
  
- 4. Peter L. Berger**
  - a. The Theory of Religion
  - b. Social Construction of Reality
  
- 5. Pierre Bourdieu**
  - a. A Theory of Practice
  - b. Theory of Cultural Capital

### **Essential Readings**

1. Parsons, Talcott; 1949; *The Structure of Social Action*; New York; McGraw Hill. 9. Parsons, Talcott. 'The Social System', The Free Press, Glencoe, Illinois, 1951
2. Parsons, Talcott; 1967; *Sociological Theory and Modern Society*; New York; Free Press. 11. Turner, J.H; 1987; *Structure of Sociological Theory*; Jaipur; Rawat Publications.
3. Parsons, T. and E. Shils (eds). 1951. *Towards a General Theory of Action*. New York: Harper and Row Publishers, pp. 3-29
4. Levi-Strauss, C. 1993. "Structure and Dialectics", in *Structural Anthropology Volume I*. Harmondsworth: Penguin, pp. 232-242
5. Mead, G.H. 1934 (Fourteenth Impression 1967 ) *Mind Self and Society*. Chicago: University of Chicago Press. Part III, pp135-226
6. Berger, P. L. and T. Luckmann. 1991. *The Social Construction of Reality*. London: Penguin Books, pp. 31-62
7. Bourdieu, P. 1977. *Outline of a Theory of Practice*. Cambridge: Cambridge University Press, pp. 72-95
8. Ritzer, G. 1996. *Sociological Theory*. New York: McGraw Hill Companies.

## **SOC 6.2: SOCIOLOGICAL RESEARCH METHODS II**

**Objective:** The course is an introductory course on how research is actually done. With emphasis on formulating research design, methods of data collection, and data analysis, it will provide students with some elementary knowledge on how to conduct both, quantitative and qualitative research.

### **Outline**

#### **1: APPROACHES TO RESEARCH**

- a. Quantitative
- b. Qualitative
- c. Ethnography

#### **2: METHODS OF RESEARCH**

- a. Social Survey
- b. Case Study

#### **3: TYPES OF RESEARCH**

- a. Basic and Applied
- b. Historical and Empirical

#### **4: DATA PROCESSING AND ANALYSIS**

- a. Methods of Data Processing
- b. Analysis of Data

#### **5: REPORT WRITING**

- a. Interpretation of Data
- b. Techniques of Report Writing

### **Essential Readings:**

1. Ahuja, ram: 2009; *Research Methods*; Jaipur; Rawat Publication
2. Beteille, A. and T.N. Madan; 1975; *Encounters and Experience: Personal Accounts of Feildwork*; New Delhi; Vikas publishing House.
3. Cauvery, R et.al; 2003; *Research Methodology*; New Delhi; S. Chand and Company Ltd.
4. Dooley, David; 2007; *Social Research Methods (Fourth edition)*; New Delhi; Prentice Hall of India
5. Ghosh, B. N; 1985; *Scientific Methods and Social Research*; New Delhi; Sterling Publishers Pvt. Ltd.
6. Goode, William J. and Paul K. Hatt; 1987; *Methods and Social Research*; London: MC Graw Hill Books Company.
7. Kothari, C.R; 2005; *Research Methodology. Methods and Techniques*; New Delhi; New Age International (P) Limited Publishers.
8. Kumar, Ranjit; 1999; *Research Methodology: A Step by Step Guide for Beginners*; New Delhi; Sage Publication.
9. Misra, R.P; 2001; *Research Methodology: A Hand Book*; New Delhi; Concept Publishing Company.
10. Punch, Keith F; 2005; *Introduction to Social Research: Quantitative and Qualitative Approaches (Second Edition)*; New Delhi; Sage Publications.
11. Young, P.V; 1988; *Scientific Social Surveys and Research*; New Delhi; Prentice Hall of India.

## Discipline Specific Elective

### SOD 5.3: Urban Sociology

#### Course Objective:

This course provides an exposure to key theoretical perspectives for understanding urban life in historical and contemporary contexts. It also reflects on some concerns of urban living while narrating the subjective experiences of urban communities. With case studies from India and other parts of the world this course will help students relate to the complexities of urban living.

#### Outline:

1. **Introduction**
  - a. Concepts
  - b. Urbanism and the City
  
2. **Perspectives in Urban Sociology**
  - a. Ecological
  - b. Political Economy
  - c. Network
  - d. City as Culture
  
3. **Urban Social Problems**
  - a. Migration
  - b. Beggary and Prostitution
  - c. Crime and Delinquency
  
4. **Politics of Urban Space**
  - a. Culture and Leisure
  - b. Caste, Class and Gender
  
5. **The Urban Technological Growth**
  - a. Social networks and New Technologies
  - b. Globalisation

#### Essential Readings

1. Mumford, Lewis 1961. *The City in History: its origins and transformations and its prospects.* Mariner Books: Pp 3-29, 94-118
2. Holton, R.J. *Cities, Capitalism and Civilization*, London: Allan and Unwin, Chapters. 1 & 2. Pp. 1–32
3. Lewis, Wirth 1938 “Urbanism as a way of Life” in *American Journal of Sociology*, Vol. 44, No.1 (July), Pp. 1-24
4. Harvey, David 1985 *The Urban Experience*, Baltimore: Johns Hopkins University Press, Chapter 1. Money, Time, Space and the City. Pp. 1-35
5. Weber, Max 1978. *The City.* The Free Press: New York. Pp 65-89
9. Simmel, George, 1903, “Metropolis and the Mental Life” in Gary Bridge and Sophie Watson, eds. *The Blackwell City Reader.* Oxford and Malden, MA: Wiley-Blackwell, 2002.
6. Ayyar, Varsha ,2013. “Caste and Gender in a Mumbai resettlement site”, *Economic & Political Weekly*, May 4, Vol. XLVIII, No 18, Pp 44-55
7. Kamath, Lalitha and Vijayabaskar, M, 2009 “Limits and possibilities of Middle Class Associations as Urban collective actors”, *Economic & Political Weekly*, June 27, 2009 vol XLIV No. 26 & 27, Pp 368 -376
8. Manuel Castells, 1983, “Cultural Identity, Sexual Liberation an Urban Structure: The Gay Community” in *San Francisco in City and the Grassroots*, Pp. 138-170



## **SOD 5.4: Environmental Sociology**

### **Course Objective**

This course is designed to introduce students to the core debates of environmental sociology, different approaches within the sub-discipline and how these approaches may be used to understand environmental issues and movements in India.

### **Outline**

#### **1. Introduction**

- a. Meaning and Definition
- b. Origin and Development

#### **2. Approaches**

- a. Treadmill of Production
- b. Ecological Modernization
- c. Political Ecology

#### **3. Environmental movement in India**

- a. Forest Based Movement – Chipko
- b. Water Based Movement – Narmada
- c. Land Based Movement- Anti-Mining and Seed

#### **4. Types Of Environment Pollution**

- A. Water, Air
- B. Soil, Noise

#### **5. Legislative Measures**

- A. Environment Justice
- B. Policy and Action

### **Essential Readings**

1. Bell, MM. (2008). *An Invitation to Environmental Sociology*. Thousand Oaks, CA: Sage 3rd ed. Ch 1.( pp. 1-5).
2. Hannigan, J. A. (1995). *Environmental Sociology*. Routledge, London and New York, 2nd ed. Ch1 and 2. (pp. 10-15,16 - 35).
3. Leahy, T. (2007). *Sociology and the Environment*. *Public Sociology: An Introduction to Australian Society*. Eds. Germov, John and Marilyn, Poole. NSW: Allen & Unwin, Ch 21 (pp. 431-442).
4. Evanoff, R. J. (2005). Reconciling realism and constructivism in environmental ethics. *Environmental Values*, 61-81.
5. Gould, K. A., Pellow, D. N., & Schnaiberg, A. (2004). Interrogating the Treadmill of Production: Everything You Wanted to Know about the Treadmill but Were Afraid to Ask. *Organization & Environment*, 17(3), 296-316.

6. Wright, E. O. (2004). Interrogating the Treadmill of Production: Some Questions I Still Want to Know about and Am Not Afraid to Ask. *Organization & Environment*, 17(3), 317-322.
7. Mol, A. P. (2002). Ecological modernization and the global economy. *Global Environmental Politics*, 2(2), 92-115.
8. Buttel, F. H. (2000). Ecological modernization as social theory. *Geoforum*, 31(1), 57-65.
9. O'Connor, J. (1994). Is sustainable capitalism possible. Is capitalism sustainable? *Political Economy and the Politics of Ecology*. The Guilford Press. Ch (pp.152-175).
10. Guha, R. Chipko : Social history of an environmental movement. In Ghanshyam Shah ed.(2002). *Social Movements and the State* (Vol. 4). Sage Publications Pvt. Ltd., Ch. 16 (pp.423-454).
11. Khagram, S., Riker, J. V., & Sikkink, K. (2002). Restructuring the global politics of development: The Case of India's Narmada Valley Dams. *Restructuring World Politics: Transnational Social Movements, Networks, and Norms* (Vol. 14). U of Minnesota Press. (pp.206-30).
12. Padel, F., & Das, S. (2008). Orissa's highland clearances: The reality gap in R & R. *Social Change*, 38(4), 576-608.
13. Scoones, I. (2008). Mobilizing against GM crops in India, South Africa and Brazil. *Journal of Agrarian Change*, 8(2-3), 315-344.
14. Guha, R., & Alier, J. M. (1998). The environmentalism of the poor. In *Varieties of environmentalism: Essays North and South*. New Delhi: Oxford University Press.
15. Osofsky, H. M. (2003). Defining Sustainable Development after Earth Summit 2002. *Loy. LA Int'l & Comp. L. Rev.*, 26, 111.
16. Baviskar, A. (1999). *In the Belly of the River: Tribal Conflicts over Development in the Narmada Valley*. Oxford University Press.

## **SOD 6.3: Indian Sociological Traditions**

### **Course Objective:**

Traditions in Indian sociology can be traced with the formal teaching of sociology as a subject in Bombay university way back in 1914. While the existence of a "Sociology in India" and "Sociology of India" have been largely debated in terms of whether it has been influenced by western philosophy, is there a need of indigenization etc., sociologists in India have primarily been engaged with issues of tradition and modernity, caste, tribe and gender. This paper primarily provides perspectives of key Indian sociologists on some of these issues.

### **Outline**

- 1: G.S GHURYE**
  - a. Caste and Race
  - b. City and Civilization
- 2: RADHAKAMAL MUKHERJEE**
  - a. Personality, Society, Values
  - b. Social Ecology
- 3: D.P MUKERJI**
  - a. Tradition and Modernity
  - b. Middle Class
- 4: M.N SRINIVAS**
  - a. Dominant Caste
  - b. Social Change
- 5: VERRIER ELWIN**
  - a. Tribes in India
  - b. Naga Society

### **Essential readings**

1. Upadhyaya, Carol 2010, "The Idea of an Indian Society: G.S. Ghurye and the Making of Indian Sociology?" in Patricia Uberoi, Satish Deshpande and Nandini Sundar (ed) *Anthropology in the East: Founders of Indian Sociology and Anthropology* New Delhi: Permanent Black
2. Ghurye, G.S. 1969, *Caste and Race in India*, Delhi: Popular Prakashan Pp 114-140, 404-460 (82 pages)
3. Ghurye, G.S. 1962, *Cities and Civilization*, Delhi: Popular Prakashan
4. Mukerjee, Radhakamal 1950, *The Social Structure of Values*, London: George Allen and Unwin Chp 2,3, 5, 6 & 9
5. Mukerjee, Radhakamal 1932, (reproduced in 1994) "An Ecological Approach to Sociology?" in Ramchandra Guha (ed) *Social Ecology* Delhi: OUP
6. Mukerjee, Radhakamal 1932, The concepts of balance and organization in *Social Ecology* *Sociology and Social Research* 16 (July-August 1932) 503- 516
7. Mukerji D.P. (1958 second edition 2002), *Diversities: Essays in Economics, Sociology and Other Social Problems*, Delhi: Manak Publications Pg 177-225, 261-276
8. Guha, Ramchandra 2010, "Between Anthropology and Literature: The Ethnographies of Verrier Elwin?" in Patricia Uberoi, Satish Deshpande and Nandini Sundar (eds) *Anthropology in the East: Founders of Indian Sociology and Anthropology*, New Delhi: Permanent Black
9. Elwin, Verrier 1955, *The Religion of an Indian Tribe*, Bombay: OUP Chp 11,15,16, 17
10. Munshi, Indra 2004, "Verrier Elwin and Tribal Development?" in T.B. Subba and Sujit Som (eds) *Between Ethnography and Fiction: Verrier Elwin and the Tribal Question in India*, New Delhi: Orient Longman
11. Srinivas, M.N. 1996, *Indian Anthropologists and the study of Indian Society* EPW 31(11) 656-657
12. Srinivas, M.N. 1971, *Social Change in Modern India* University of California Press Berkeley Chp 4-5 :

## SOD 6.4: Reading Ethnographies

### Course Objectives

This course encourages the student to read ethnographic texts in their entirety. Any one set of texts from the four pairs are to be chosen. Readers are relatively free to interpret the texts within the parameters mentioned below. Suggested readings can be utilized to frame specific questions while reading the ethnographic texts and writing about them. The examination, however, will be patterned on the parameters mentioned in the outline.

(The committee of courses at the Department of Sociology may prescribe these or any other pairs of texts for any given academic year.)

### Outline:

1. Ethnographic Mode of Enquiry
2. Constructing the Ethnographic Object
3. Ethnographic Practices and Styles

### COURSE CONTENTS AND ITINERARY

1. [Weeks 1?14]

Malinowski, Bronislaw. 1922. *Argonauts of the Western Pacific: An Account of Native Enterprise and Adventure in the Archipelagoes of Melanesian New Guinea*. Studies in Economics and Political Science, no. 65. London: Routledge and Kegan Paul.

Srinivas, M. N. 1976. *The Remembered Village*. Delhi: OUP. Or

2. [Weeks 1?14]

Evans? Pritchard, E. E. 1937. *Witchcraft, Oracles and Magic among the Azande*. London: Oxford University Press.

Taussig, Michael. 2010 (1980). *The Devil and Commodity Fetishism in South America*. Chapel Hill: University of Carolina Press. Or

3. [Weeks 1?14]

Lewis, Oscar. 1961. *The Children of Sánchez: Autobiography of a Mexican family*. New York: Random House.

Cohen, Lawrence 1998. *No Aging in India: Alzheimer's, The Bad Family, and Other Modern Things*. London: University of California Press. Or

4. [Weeks 1?14]

Mead, Margaret. 1928. *Coming of Age in Samoa: A Psychological Study of Primitive Youth for Western Civilization*. New York: Harper Collins.

Willis, Paul. 1977. *Learning to Labour: How Working Class Kids Get Working Class Jobs*. Columbia: Columbia University Press.

### SUGGESTED READINGS:

1. Clifford, James and George Marcus . 1986. *Writing Culture: The Poetics and Politics of Ethnography*. London: University of California Press.

2. Kumar, Nita. 1992. *Friends, Brothers and Informants: Fieldwork memoirs of Banaras*. Berkeley: University of California Press.

3. Levi?Strauss, Claude. 1973. *Tristes Tropiques*. London: Penguin.

4. Rainbow, Paul. 1977 (2007). *Reflections on Fieldwork in Morocco*. Berkeley: University of California Press.

5. Rosald, Renato. 1989. *Culture and Truth: The Remaking off Social Analyses*. Boston: Beacon Press

Screenings of ethnographic films will complement the teaching.

Video documentation around the ethnographies could also be used concurrently while reading texts.

## Generic Elective

### SOG 1.4: Indian Society: Images and Realities

#### Course Objective:

This course seeks to provide an interdisciplinary introduction to Indian society.

#### Outline

- 1: Ideas of India
  - a. Civilization
  - b. Colony
  
- 2: Communities
  - a. Villages
  - b. Towns
  - c. Region
  
- 3: Processes
  - a. Caste
  - b. Religion
  - c. Ethnicity
  
- 4: Institution
  - a. Kinship and Gender
  - b. Political Economy
  
- 5: Critiques
  - a. Minority
  - b. Religious Communalism

#### Essential Reading

1. Embree, Ainslie Thomas,. *Imagining India*. Delhi: Oxford University Press, 1989. Chapter- Brahmanical Ideology and Regional Identities. Pp. 9 – 27
2. Cohn, Bernard. *India: Social Anthropology of a Civilization*, Delhi: OUP. Chapters 1, 3, 5 & 8 (1-7, 24-31, 51-59, 79-97)
3. Breman, Jan. 'The Village in Focus' from *The Village Asia Revisited*, Delhi: OUP 1997. Pp. 15-64
4. Cohn, Bernard. *An Anthropologist Among Historians and Other Essays*, Delhi: OUP, 1987, Chapters. 4 and 6. Pp.78-85 & 100 – 135
5. Mines, Diane P. *Caste in India*. Ann Arbor, Mich.: Association for Asian Studies, 2009. Pp. 1-35
6. Fuller, C. J. *The Camphor Flame: Popular Hinduism and Society in India*. Delhi: Viking, 1992. Chapter 1. Pp. 3 – 28. Ahmad, Imtiaz et.al (eds). *Pluralism and Equality: Values in Indian Society and Politics*, Sage : New Delhi, 2000. Chapter: 'Basic Conflict of 'we' and 'they" Between religious traditions, between Hindus, Muslims and Christians'. Pp.
7. Dube, Leela. 'On the Construction of Gender: Hindu Girls in Patrilineal India', *Economic and Political Weekly*, Vol. 23, No. 18 (Apr. 30, 1988), pp. WS11-WS19
8. Gray, John N. & David J. Mearns. *Society from the Inside Out: Anthropological Perspectives on the South Asian Household*. New Delhi: Sage,
9. Chatterjee, Partha. *State and Politics in India*. Delhi: Oxford University Press, 1997. Introduction: A Political History of Independent India. Pp. 1-39
10. Omvedt, Gail. *Understanding Caste*. New Delhi: Orient Black Swan, 2011. Chapters. 5, 9, 11 and Conclusion. Pp. 30-38, 67 – 73, 83 – 90, 97 – 105
11. Sangari, Kumkum and Sudesh Vaid. *Recasting Women: Essays in Indian Colonial History*. New Brunswick: Rutgers University Press. Introduction, Pp

## **SOG 2.4: Gender and Violence**

### **Course Objective:**

Gendered violence is routine and spectacular, structural as well as situated. This course attempts to provide an understanding of the logic of that violence, awareness of its most common forms and tries to equip the students with a sociologically informed basis for making pragmatic, ethical and effective choices while resisting or intervening in the context of gendered violence.

### **Outline:**

#### **1. Gender Based Violence**

- a. Definition and Types, Sites of Gender Based Violence (Family, Community/ Society, State)
- b. Gender Based Violence; A Human Right Violence

#### **2. Structural Violence**

- a. Caste, Gender and Violence
- b. Domestic and Familial Violence

#### **3. Situated Violence**

- a. Gender and Conflict Situation
- b. Violence, Harassment and the Workplace

#### **4. Sexual Violence**

- a. Types of Sexual Violence
- b. Factors Increasing Women's Vulnerability

#### **5. Response to Violence**

- a. State Response
  - National Human Right Commission
  - National Commission for Women
  - Law Enforcing Agencies
- b. Service Providers
  - Helplines
  - Women and Children Helplines
- c. Non-state Actors
  - NGO's
  - Collective Protests

### **Essential Readings**

1. Kimmel, Michael S. *The Gendered Society*. New York: Oxford University Press, 2011. Chapter 13. Gender of Violence, Pp. 381-407
2. Wies, Jennifer R. *Anthropology at the Front Lines of Gender-Based Violence*. Nashville, Tenn.: Vanderbilt Univ. Press, 2011. Chapter 1. Ethnographic Notes from the Frontlines of Gender Based Violence, Pp. 1-18
3. Kannabiran, Vasanth and Kalpana Kannabiran, Caste and Gender: Understanding Dynamics of Power and Violence, *Economic and Political Weekly*, Vol. 26, No. 37 (Sep. 14, 1991), pp. 2130-2133.
4. Irudayam, Aloysius, Jayshree P Mangubhai, and Joel G Lee. *Dalit Women Speak Out*. Chapters. 1, 3, 4, 13 and 14.
5. Karlekar, Malavika. Domestic Violence, *Economic and Political Weekly*, Vol. 33, No. 27 (Jul. 4-10, 1998), pp. 1741-1751
6. Agnes, Flavia, *'My Story, Our Story: Building Broken Lives'* Mumbai: Majlis. 1984.
7. Chowdhry, Prem. Enforcing Cultural Codes: Gender and Violence in Northern India, *Economic and Political Weekly*, Vol. 32, No. 19 (May 10-16, 1997), pp. 1019-1028

8. Wood, E. J. 'Variation in Sexual Violence during War'. *Politics & Society* 34.3 (2006): 307-342.
9. Butalia, Urvashi. *The Other Side of Silence*. Durham, NC: Duke University Press, 2000. Chapter 4, Pp. 104–171
10. MacKinnon, Catharine A. *Only Words*. Cambridge, Mass.: Harvard University Press, 1993. Chapter II Racial and Sexual Harassment. Pp. 43–68.
11. Tejani, Sheba. Sexual Harassment at the Workplace: Emerging Problems and Debates, *Economic and Political Weekly*, Vol. 39, No. 41 (Oct. 9-15, 2004), pp. 4491-4494
12. Box, Steven. *Power, Crime, and Mystification*. London: Routledge, 1989. Chapter 4. Rape and Sexual Assaults on Women Pp. 120–165
13. Scully, Diana and Joseph Marolla. "Riding the Bull at Gilley's": Convicted Rapists Describe the Rewards of Rape, *Social Problems*, Vol. 32, No. 3 (Feb., 1985), pp. 251-263
14. Menon, Nivedita. Recovering Subversion: Feminist Politics beyond the Law. Ranikhet: Permanent Black. 2004. Chapter 3. Sexual Violence: Escaping the Body. Pp. 106–156
15. Omvedt, Gail, *Violence Against Women: New Movements and New Theories in India*. Delhi: Kali for Women, 1990. Pp. 1-40
16. Das, Veena & Kim Turcot DiFruscia. Listening to Voices: An Interview with Veena Das, *Altérités*, vol. 7, no 1, 2010 : 136-145.
17. Naquvi, Farah. This Thing called Justice: Engaging Laws on Violence against Women In India, in Bishakha Dutta (ed.), *Nine Degrees of Justice: New Perspectives on Violence Against Women in India*. Delhi: Zuban, 2010.

#### **Additional Resources:**

1. Wall, Liz. 'Gender equality and violence against women what's the connection?' The Australian Center for the study of Sexual Assault Research Summary. 2014.
2. Welchman, Lynn, and Sara Hossain. "*Honour*". London: Zed Books, 2005. Chapter 2. 'Crimes of Honour': Value and Meaning Pp. 42-64
3. Loy, Pamela Hewitt, and Lea P. Stewart. 'The Extent and Effects of the Sexual Harassment of Working Women'. *Sociological Focus* 17.1 (1984): 31-43.
4. Pickup, Francine, *Ending Violence against Women: A Challenge for Development and Humanitarian Work*, London: Oxfam, 2001. Chapter 5. Direct support to the survivors of violence & Chapter 8. Challenging the State.
5. United Nations Division for the Advancement of Women, 'Good Practices in Legislation on Violence against Women' 2008. Part III, Framework for Legislation on Violence against Women.
6. Puri, Jyoti. 'Sodomy, Civil Liberties, and the Indian Penal Code' in Chatterji, Angana P, and Lubna Nazir Chaudhry. *Contesting Nation*. Delhi: Zuban. Pp. 100-132

## **SOG 3.5: SOCIOLOGY OF SOCIAL MOVEMENTS**

### **Course Objectives:**

This course looks at social movements from a sociological perspective. It introduces the contexts and concepts of social movements and attempts to theoretically locate them through concrete case studies.

### **Outline:**

- 1. Contextualizing Social Movements**
  - a. Meaning and Definition
  - b. Classification
  
- 2. Theories of Social Movements**
  - a. Deprivation Theory
  - b. Structural – Strain Theory
  - c. Resource – Mobilization Theory
  
- 3. Contemporary Social Movements**
  - a. Women's Movement
  - b. Environment Movement
  
- 4. Peasant Movement**
  - a. Telengana Movement
  - b. Naxalbari Movement
  
- 5. Tribal Movement**
  - a. Bodo Movement
  - b. Naga Political Movement

### **Essential Readings**

1. Crossley, Nick. 2009. Making Sense of Social Movements. Jaipur: Rawat Publication, pp. 17-55.
2. McCormick, Sabrina. 2007. Democratizing Science Movements: A New Framework for Mobilization and Contestation. *Social Studies of Science*, Vol. 37, No. 4, pp. 609-623.
3. David Snow, Sarah A. Soule and Hanspeter Kriesi, ed. 2008. *Blackwell Companion to Social Movements*. 'Mapping the Terrain' New York: Wiley-Blackwell. pp. 3-16.
4. Della Porta, Donatella and Mario Diani, 2006. *Social Movements: An Introduction*. Oxford: Blackwell Publishing. pp. 1-29.
5. Environmental Action Groups”. In T. K. Oommen, ed., *Social Movements: Concerns of Equity and Security*. Delhi: Oxford University



## **SOG 4.5: POPULATION AND SOCIETY**

### **Course Objectives:**

This course provides a critical understanding of the interface between population and society. It analyses the role of fertility, mortality and migration on the composition, size, and structure of population. The course addresses the issue of domestic and international population movements and their economic, political and social implications.

### **Outline:**

- 1. Introduction**
  - a. Concepts and Scope
  - b. Importance
- 2. Approaches/Theories**
  - a. Malthusian Theory
  - b. Demographic Transition Theory
  - c. Optimum Theory
- 3. Migration**
  - a. Causes and Types
  - b. Immigration Issues in North-East India
- 4. Population Trends**
  - a. Trends of World Population
  - b. Trends of Indian Population
- 5. Population Dynamics and Development**
  - a. Population Programmes and Policies
  - b. Population Education

### **Essential Readings**

1. Durkheim, Emile. 1982 (1895). *The Rules of Sociological Method*. (trans. W.D. Halls). New York: The Free Press, pp. 136-137; 188, 203.
  2. Malthus, Thomas Robert. 1866. *An Essay on the Principle of Population*. London: William Pickering, Chapters 1-2, pp. 01-11. India: In the New Millennium. New Delhi: National Book Trust, pp.103-127.
  3. Government of India. 2000. *National Population Policy*. New Delhi (<http://www.populationcommission.nic.in/facts1.htm>).
  1. Mukherjee, Radhakamal. 1934. 'On the Criterion of Optimum Population', *American Journal of Sociology*, 40(3): 344-348.
  2. Sen, Amartya, 2003. 'Population: Delusion and Reality', *Asian Affairs* Caldwell, John C. 2001. 'Demographers and the Study of Mortality: Scope, Perspectives and Theory', *Annals of the New York Academy of Sciences*, 954: 19-34.
  3. Dyson, Tim and Moore, Michael. 1983. 'On Kinship Structure: Female Autonomy and Demographic Behaviour in India', *Population and Development Review*, 9(1): 35-60.
  4. Bose, Ashish. (ed.). 1974. *Population in India's Development (1947-2000)*. Delhi: Vikas Publishing House.
  5. Premi, M.K. et.al; 1983; *An Introduction to Social Demography*; Delhi; Vikas Publishing House
  6. Sharma, Rajendra; 1997; *Demography and Population Problems*; New Delhi; Atlantic Publishers.
  7. Srivastava, O.S; 1994; *Demography and Population Studies*; New Delhi; Vikas Publishing House.
  8. *Census of India Reports*; Government of India.
- [Projects, presentations, feature films and documentary screenings and field visits will be an integral part of the coursework]

## Skilled Enhancement Course

### SOS 3.4: Reading, Writing and Reasoning for Sociology

#### Course Objective:

Reading and writing academic prose is not the same as the performance of these activities in ordinary language, yet these are the skills that are never taught, except perhaps in tutorial systems (where they exist). Unlike most language courses that lean towards literature or functional skills, this is a crash course in survival techniques for developing literacy in academic language. It consists of a graded series of reading and writing exercises using 'real' texts from the social sciences that will enable students to tackle text-related tasks with confidence. There is a conscious attempt to generate synergies by mirroring the reading and writing exercises.

#### Outline:

- 1. Introduction: The virtues of repetition [Week 1]**
- 2. Techniques for reading academic texts [Weeks 2–7]**  
Grasping the whole: How to get an overview  
Divide and conquer: Taking texts apart  
Getting outside help: Recruiting extra resources
- 3. How to begin writing academic prose [Weeks 8–13]**  
Building a structure: What do you want to say?  
Working with blocks: Sections, paras, sentences  
Borrowing material: Paraphrasing, quoting, citing
- 4. Final sessions: peer reviewing [Week 14]**

#### *COURSE CONTENTS AND ITINERARY*

##### **1. Introduction: The virtues of repetition [Week 1]**

Academic reading and writing is really all about re-reading and rewriting – about repeatedly re-working a text until some provisional goal is achieved.

Assignment, Day 1: Read a short (1-2 page) academic text of moderate difficulty and summarize it in one paragraph (3-4 sentences). (This is without prior guidance by the instructor).

Assignment, Day 2: Re-read the same text and re-write the summary after a brief discussion of content (does the summary contain most of the most important points made in the text?)

Assignment, Day 3: Re-read the same text and re-write the summary again after a brief discussion of FORM (is the summary well structured, clear and effective?)

##### **2. Techniques for reading academic texts [Weeks 2–7]**

###### **Grasping the whole: How to get an overview**

Titles as the shortest summary of a text  
Good and bad titles  
Section headings (where present)

Introductions and Conclusions  
Identifying important passages and sentences  
**Divide and conquer: Taking texts apart**

Beginning, middle and conclusion – stages of argument 2.2.2 The architecture of arguments: main, subsidiary, minor 2.2.3 Everything is not equally important: Distribution of emphasis

### **Getting outside help: Recruiting extra resources**

Isolating words & terms: Dictionaries, Encyclopedias  
Contextualising texts with quick background research  
Productive ways of asking for help from teachers/tutors

## **3. Techniques for writing academic prose [Weeks 8–13]**

### **Building a structure: What do you want to say?**

Beginning, middle and conclusion – stages of argument  
The architecture of arguments: main, subsidiary, minor  
Everything is not equally important: Distribution of emphasis

### **Working with blocks: Sections, Paragraphs, Sentences**

How many sections? Job descriptions for each section 3.2.2 Paragraphs as key building blocks of academic prose  
3.2.3 Sentences and punctuation; length, balance, continuity

### **Borrowing material: Paraphrasing, Quoting, Citing**

The difference between paraphrasing and plagiarism  
Quotations: When? Why? How? 3.3.3 Citation styles  
3.3.4 Productive ways of asking for help from teachers/tutors

## **4. Final sessions: peer reviewing [Week 14]**

The ability to judge and evaluate is a crucial skill, particularly when applied to oneself. Students will practice evaluating each other's work throughout the semester, but the last week can be formalized and stepped up into a more elaborate exercise.

Assignment, Day 1: The whole class does an individualized, two-part composite reading and writing exercise designed by the instructor based on semester long experience of student abilities and interests.

Assignment, Day 2: The reading part of the individual assignment is randomly distributed for students to evaluate and comment on their colleagues' work. The instructor moderates discussion of strengths and weaknesses, highlighting techniques for recognizing quality (or its lack).

Assignment, Day 3: The writing part of the assignment is similarly distributed and evaluated through interactive, moderated discussion.

**Note:**

Through this course, students should learn how to recognize good or bad writing and should be equipped with the elementary techniques for 'repairing' bad or damaged prose. The course will be preceded by a workshop for teachers. Short extracts for class exercises will be culled from classic and contemporary social science texts of varying levels of difficulty and of different genres and styles. The actual set of texts will be decided at the preparatory workshop. Examples could include:

Keynes, John Maynard (1936) *The general theory of employment, interest and money*, Palgrave Macmillan, United Kingdom

Parsons, Talcott (1951): *The social system*, Glencoe III, Free Press

Douglas, Mary (1986) *How institutions think*, Syracuse University Press, Syracuse, New York.

Romila Thapar (2004) *Somanatha: The many voices of history*, Penguin Books, India

Sunil Khilnani (1997) *The idea of India*, Penguin Books.

Louis Dumont (1980) *Homo Hierarchicus*, University of Chicago Press.

Well-known guides to academic writing (such as Howard Becker's *Writing for Social Scientists*) will also be used where appropriate.

## SOS 4.4: TECHNIQUES OF ETHNOGRAPHIC FILM MAKING

### Course Objectives:

This course focuses on doing sociology and social anthropology through forms other than the written; in particular, the oral, aural, and the visual. It introduces students to film techniques as a form and method of description and argument and enables a comparison between film and the written mode as ethnography. One concern that may be pursued is how the visually challenged encounter, experience and represent the field. The course will be conducted through group work enabling a learning process between the visually challenged and the non-visually challenged.

### Outline:

1. **Introduction to Anthropological Filmmaking**  
Anthropology and Filmmaking: The Text and the Image  
Different Modes of Filmmaking
2. **Understanding the use of Camera in Anthropology**
3. **The Filmmaker and the Filmed: Relationship and Understanding 'ethics'**
4. **Editing and Construction of Meaning**  
4.1 Understanding Multiple Shots and Camera Movement  
4.2. Tools for Film Editing
5. **Filming Oral testimonies, Interviews and Interactions**
6. **Final Film Projects**

### C O U R S E CONTENTS AND ITINERARY

#### 1. **Introduction to Anthropological Filmmaking: [Week 1-2]**

Rouch, Jean, 'Conversation between Jean Rouch and Professor Enrico Fulchignoni,' In trans. Steven Feld, *Cine-Ethnography*. University of Minnesota Press, 2003. Pp. 147-187

Hastrup, Kirsten. 'Anthropological Visions: Some Notes on Visual and Textual Authority' In *Film as Ethnography*. Peter Ian Crawford, and David Turton, eds. Manchester and New York: Manchester University Press, 1993. Pp. 8-25.

Suggested Screening of Film Scenes/Sequences, *Trance and Dance in Bali* by Margaret Mead and Gregory Bateson, 22 mins.

Nichols, Bill. 'What types of Documentary are there?' In *Introduction to Documentary*. Bloomington: Indiana University Press, 2001. Pp. 99-137.

Suggested Screening of Film Scenes/Sequences: *Etre et Avoit* by Nicholas Philibert's, 105 mins, 2002; *New Boys* by David MacDougall, 100 mins, 2003; *Dilli- Mumbai-Dilli* by Saba Dewan, 63 mins, 2006; *Bowling for Columbine* by Roger Moore, 120 mins, 2002.

Suggested topics for technical discussion - Understanding the Camera – still, moving, digital, analog; Shot Vs Scene; Image Vs Sound; Camera angles; How to store your data?; How to take care of equipment?

*Practical Work for Week 1/2* - Familiarise yourself with your camera. Use your still camera to click photos of the same objects from different angles.

## **2. Understanding the use of Camera in Anthropology: [Week 3]**

2.0.1 El Guindi, Fadwa. 'For God's Sake Margaret' In *Visual Anthropology: Essential Method and Theory*, Walnut Creek, CA: AltaMira, 2004. Pp. 61-82

2.0.2. Suggested Screening of Film Scenes/Sequences: *Diyas*, Judith MacDougall, 56 mins, 1997/2000.

2.0.3 Suggested topics for technical discussion – Small and big cameras, tripod and hand held cameras, Understanding light; Filmmaker's Dilemma – where to place the camera?; Filmmaking – Working Single or in a Team?

2.0.4. *Practical Work for Week 3* – Camera mounting on tripod; handheld camera practices.

## **3. Filmmaker and the Filmed: Relationship and understanding 'ethics'.**

[Weeks 4-5]

3.0.1 Spiegel, Pauline, 'The Case of the Well-Mannered Guest' in *The Independent Film and Video Monthly* April 1984. Pp. 15-17

MacDougall, 'Whose Story is it?' In *Visual Anthropology Review*, Volume 7, Issue 2, Pp. 2–10, September 1991

Suggested topics for discussion: Dimensions of relationship between the filmmaker and the filmed - Gender, Class, Ethnicity.

By this point, students should start thinking about topics and groups for their final film.

*Practical Work for Week 4-5*: Assignment on Observational Mode; Choose your partners and make filmmaking teams; Make one shot of something of your interest. Not more than 2 mins. Fixed frame, without movement. No speech/dialogues. Tripod is optional. Camera type is optional, as long as the resolution allows viewing on a classroom projector.

### **Viewing of assignments and discussions.**

## **4. Editing and Construction of Meaning [Weeks 6-8]**

4.1.1 Suggested topics for technical discussion: Multiple shots, understanding point-of-view; narrative building, filming a process, types of editing; Understanding space and material objects – vis-à-vis the character; Types of camera movement; Motivations behind Camera movement; Movement within the shot.

By this time, students should have decided upon their final film projects. They should start approaching respondents and rekeying locations.

Suggested Screening of Film Scenes/Sequences: *Battleship Potemkin* by Sergei Eisenstein, 69 mins. 1925; *Strangers on a Train* by Alfred Hitchcock, 101 min, 1951.

4.2.1 Suggested topics for technical discussion: Understanding editing software (Suggested software: Avid/Final Cut Pro/Windows Movie Maker); Transferring and sequencing of data; Data Backup before editing; Viewing footage; Transcription and Paper Edits.

4.2.2. *Practical Work for Week 6-9*: Assignment on Process film; 3 mins; Film an activity; Include camera movement; Break it down in stages - beginning, middle and end; Understand the cause and effect; Focus only on (i) the person (ii) the activity; editing the process film.

4.2.3. Viewing of assignments and discussions.

## 5. **Filming Oral Testimonies, Interviews and Interactions** [Weeks 9-10]

Suggested Screening of Film Scenes/Sequences: *Chronicle of a Summer* by Edgar Morin, Jean Rouch, 85 min, 1961.

**Suggested topics for technical discussion: Sound and audio equipment.**

Practical Work for Week 9-10: Film an oral testimony, with maximum 2 people; Length, no more than 5 minutes; Focus on Interaction; Location is optional

**Viewing of assignments and discussions.**

## 6. **Final Film Projects** [Weeks 11-14]

Film length limited to 5 - 8 mins.

**Viewing of projects and discussion.**

**Note:** This course will require a special budget for the purchase/hiring of equipment and for honorarium to technical resource persons.

### **Suggested Readings:**

Heider, Karl G. *Ethnographic Film*, Austin: University of Texas Press, 2006

MacDougall, David. 'Ethnographic Film: Failure and Promise', *Annual Review of Anthropology* Vol. 7, pp. 405-425

# ST. JOSEPH'S COLLEGE, JAKHAMA

## DEPARTMENT OF COMMERCE SYLLABUS

### B. Com. (Hons.): Three-Year (6-Semester) CBCS Programme

#### COURSE STRUCTURE

<b>COURSE CODE</b>	<b>Semester I</b>	
COC 1.1	Financial Accounting	<b>Core Course (C)</b>
COC 1.2	Business Law	<b>Core Course (C)</b>
ESA 1.3	Environmental Studies	<b>Ability-Enhancement Compulsory Course (A)</b>
COG 1.4	Financial Accounting	<b>Generic Elective (G)</b>
	<b>Semester II</b>	
COC 2.1	Corporate Accounting	<b>Core Course (C)</b>
COC 2.2	Corporate Laws	<b>Core Course (C)</b>
EGA 2.3	Business Communication	<b>Ability-Enhancement Compulsory Course (A)</b>
COG 2.4	Cost Accounting	<b>Generic Elective (G)</b>
	<b>Semester III</b>	
COC 3.1	Human Resource Management	<b>Core Course (C)</b>
COC 3.2	Income-tax Law and Practice	<b>Core Course (C)</b>
COC 3.3	Management Principles and Applications	<b>Core Course (C)</b>
COS 3.4	E-Commerce	<b>Skill-Enhancement Elective Course (S)</b>
COG 3.5	Income Tax Law and Practice	<b>Generic Elective (G)</b>
	<b>Semester IV</b>	
COC 4.1	Cost Accounting	<b>Core Course (C)</b>
COC 4.2	Business Mathematics and Computer Application	<b>Core Course (C)</b>
COC 4.3	Principles of Marketing	<b>Core Course (C)</b>
COS 4.4	Entrepreneurship	<b>Skill-Enhancement Elective Course (S)</b>
COG 4.5	Banking and Insurance	<b>Generic Elective (G)</b>
	<b>Semester V</b>	
COC 5.1	Business Statistics	<b>Core Course (C)</b>
COC 5.2	Fundamentals of Financial Management	<b>Core Course (C)</b>
COD 5.3	Banking and Insurance	<b>Discipline Specific Elective (D)</b>
COD 5.4	Financial Markets, Institutions and Financial Services	<b>Discipline Specific Elective (D)</b>



	<b>Semester VI</b>	
COC 6.1	Auditing and Corporate Governance	<b>Core Course (C)</b>
COC 6.2	Indirect Tax Law	<b>Core Course (C)</b>
COD 6.3	Cost and Management Accounting	<b>Discipline Specific Elective (D)</b>
COD 6.4	Business Research Methods and Project Work	<b>Discipline Specific Elective (D)</b>

**Notes:**

1. For Practical Lab based
  - a. Core Courses BCH 1.2 (Financial Accounting), , BCH 3.4 (Business Statistics), BCH 4.2 (Business Mathematics), and there shall be 4 Credit Hrs. for Lectures+ one Credit hr. (Two Practical Periods per week per batch) for Practical Lab + one credit Hr for Tutorials (per group)
  - b. Skill Enhancement Elective Course BCH 3.5(E-Commerce), there shall be 3 Credit Hrs. for Lectures + One Credit hrs. (2 Practical Periods per week per batch) for Practical Lab
  
2. For other core and elective papers, there shall be 5 lectures and one Tutorial (per batch)

## B. Com. (Hons.): Three-Year (6-Semester) CBCS Programme

### Basic Structure: Distribution of Courses

<b>1</b>	<b>Ability Enhancement Compulsory Course (AECC)</b>	2 Papers of 2 Credit Hrs. each (Total Credit Hrs. 2X2)	<b>4</b>
<b>2</b>	<b>Skilled Enhancement Elective Course (SEC)</b>	2 Papers of 2 Credit Hrs. each (Total Credit Hrs. 2X2)	<b>4</b>
<b>3</b>	<b>CORE COURSE</b>	<b>1.</b> 4 Papers of 6 Credit Hrs. each (Total Credit Hrs. 14X6) (5 Lectures and 1 Tutorial)	<b>84</b>
<b>4</b>	<b>Discipline Specific Elective (DSE)</b>	<b>1.</b> 4 Papers of 6 Credit Hrs. each (Total Credit Hrs. 4X6) (5 Lectures and 1 Tutorial)	<b>24</b>
<b>5</b>	<b>Generic Elective (GE)</b>	<b>1.</b> 4 Papers of 6 Credit Hrs. each (Total Credit Hrs. 4X6) (5 Lectures and 1 Tutorial)	<b>24</b>
	<b>Total Credit Hrs</b>		<b>140</b>

1. **Ideal Lecture Class size 40 to 50 students**
2. **Ideal Tutorial group Size: - 10-12 students**
3. **Ideal Laboratory Practical Batch Size 15-20 Students**

## Semester - I

### COC 1.1: Financial Accounting

**Duration: 3 hrs. Marks: 100 Lectures: 52, Practical: 26**

**Objectives:** The objective of this paper is to help students to acquire conceptual knowledge of the financial accounting and to impart skills for recording various kinds of business transactions.

#### CONTENTS

##### Unit 1: (a) Theoretical Framework

**3 Lectures**

- i. Accounting as an information system, the users of financial accounting information and their needs. Qualitative characteristics of accounting, information. Functions, advantages and limitations of accounting. Branches of accounting. Bases of accounting; cash basis and accrual basis.
- ii. The nature of financial accounting principles – Basic concepts and conventions
- iii. Financial accounting standards: Concept, benefits, procedure for issuing accounting standards in India. Salient features of First-Time Adoption of Indian Accounting Standard (Ind-AS) 101. International Financial Reporting Standards (IFRS): - Need and procedures.

##### (b) Accounting Process

**9 Lectures**

Recording business transaction to preparation of trial balance(with adjustments) Capital and revenue expenditures and receipts: general introduction only. Preparation of financial statements of non-corporate business entities

##### (c) Business Income

**10 Lectures**

- i. Measurement of business income-Net income: the accounting period, the continuity doctrine and matching concept. Objectives of measurement.
- ii. Revenue recognition: Recognition of expenses.
- iii. The nature of depreciation. The accounting concept of depreciation. Factors in the measurement of depreciation. Methods depreciation: straight line method and diminishing balance method; Disposal of depreciable assets-change of method.
- iv. Inventories: Meaning. Significance of inventory valuation. Inventory Record Systems: periodic and perpetual. Methods: FIFO, LIFO and Weighted Average. Salient features of Indian Accounting Standard (Ind-AS): 2

##### Unit 2: Computerised Accounting Systems

**26 Practical Lab**

Computerised Accounting Systems: Computerized Accounts by using any popular accounting software: Creating a Company; Configure and Features settings; Creating Accounting Ledgers and Groups; Creating Stock Items and Groups; Vouchers Entry; Generating Reports - Cash Book, Ledger Accounts, Trial Balance, Profit and Loss Account, Balance Sheet, Funds Flow Statement, Cash Flow Statement Selecting and shutting a Company; Backup and Restore data of a Company

##### Unit 3: Accounting for Hire Purchase and Installment Systems 10 Lectures

Calculation of interest, partial and full repossession, Hire purchase trading (total cash price basis), stock and debtors system; Concepts of operating and financial lease (theory only)

#### **Unit 4: Accounting for Inland Branches**

**10 Lectures**

Concept of dependent branches; accounting aspects; debtors system, stock and debtors system, branch final accounts system and whole sale basis system. Independent branches: concept-accounting treatment: important adjustment entries and preparation of consolidated profit and loss account and balance sheet.

#### **Unit 5: Accounting For Dissolution of the Partnership Firm**

**10 Lectures**

Accounting of Dissolution of the Partnership Firm Including Insolvency of partners, sale to a limited company and piecemeal distribution

#### **Note:**

1. The relevant Indian Accounting Standards in line with the IFRS for all the above topics should be covered.
2. Any revision of relevant Indian Accounting Standard would become applicable immediately.
3. There shall be 4 Credit Hrs. for Lectures + one Credit hr. (Two Practical Periods per week per batch) for Practical Lab + one credit Hr for Tutorials (per group)
4. Examination Scheme for Computerised Accounting Systems – Practical for 20 marks. The practical examination will be for 1 hour.
5. Theory Exam shall carry 80 marks

#### **Suggested Readings:**

1. Robert N Anthony, David Hawkins, Kenneth A. Merchant, *Accounting: Text and Cases*. McGraw-Hill Education, 13th Ed. 2013.
2. Charles T. Horngren and Donna Philbrick, *Introduction to Financial Accounting*, Pearson Education.
3. J.R. Monga, *Financial Accounting: Concepts and Applications*. Mayur Paper Backs, New Delhi.
4. M.C. Shukla, T.S. Grewal and S.C. Gupta. *Advanced Accounts. Vol.-I*. S. Chand & Co., New Delhi.
5. S.N. Maheshwari, and. S. K. Maheshwari. *Financial Accounting*. Vikas Publishing House, New Delhi.
6. Deepak Sehgal. *Financial Accounting*. Vikas Publishing H House, New Delhi.
7. Bhushan Kumar Goyal and HN Tiwari, *Financial Accounting*, International Book House
8. Goldwin, Alderman and Sanyal, *Financial Accounting*, Cengage Learning.
9. Tulsian, P.C. *Financial Accounting*, Pearson Education.
10. *Compendium of Statements and Standards of Accounting*. The Institute of Chartered Accountants of India, New Delhi

**Note: Latest edition of the text books should be used.**

## **COC 1.2: BUSINESS LAW**

**Duration: 3 hrs. Marks: 100 Lectures: 65**

**Objective:** The objective of the course is to impart basic knowledge of the important business legislation along with relevant case law.

### **Contents:**

#### **Unit 1: The Indian Contract Act, 1872: General Principle of Law of Contract 13 Lectures**

- a) Contract – meaning, characteristics and kinds
- b) Essentials of a valid contract - Offer and acceptance, consideration, contractual capacity, free consent, legality of objects.
- c) Void agreements
- d) Discharge of a contract – modes of discharge, breach and remedies against breach of contract.
- e) Contingent contracts
- f) Quasi - contracts

#### **Unit 2: The Indian Contract Act, 1872: Specific Contract 13 Lectures**

- a) Contract of Indemnity and Guarantee
- b) Contract of Bailment
- c) Contract of Agency

#### **Unit 3: The Sale of Goods Act, 1930 13 Lectures**

- a) Contract of sale, meaning and difference between sale and agreement to sell.
- b) Conditions and warranties
- c) Transfer of ownership in goods including sale by a non-owner
- d) Performance of contract of sale
- e) Unpaid seller – meaning, rights of an unpaid seller against the goods and the buyer.

#### **Unit 4: Partnership Laws 13 Lectures**

##### **A) The Partnership Act, 1932**

- a. Nature and Characteristics of Partnership
- b. Registration of a Partnership Firms
- c. Types of Partners
- d. Rights and Duties of Partners
- e. Implied Authority of a Partner
- f. Incoming and outgoing Partners
- g. Mode of Dissolution of Partnership

##### **B) The Limited Liability Partnership Act, 2008**

- a) Salient Features of LLP
- b) Differences between LLP and Partnership, LLP and Company
- c) LLP Agreement,
- d) Partners and Designated Partners
- e) Incorporation Document
- f) Incorporation by Registration
- g) Partners and their Relationship

**Unit 5: The Negotiable Instruments Act 1881****13 Lectures**

- a) Meaning, Characteristics, and Types of Negotiable Instruments : Promissory Note, Bill of Exchange, Cheque
- b) Holder and Holder in Due Course, Privileges of Holder in Due Course.
- c) Negotiation: Types of Endorsements
- d) Crossing of Cheque
- e) Bouncing of Cheque

**Suggested Readings:**

1. M.C. Kuchhal, and Vivek Kuchhal, *Business Law*, Vikas Publishing House, New Delhi.
2. Avtar Singh, *Business Law*, Eastern Book Company, Lucknow.
3. Ravinder Kumar, *Legal Aspects of Business*, Cengage Learning
4. SN Maheshwari and SK Maheshwari, *Business Law*, National Publishing House, New Delhi.
5. Aggarwal S K, *Business Law*, Galgotia Publishers Company, New Delhi.
6. Bhushan Kumar Goyal and Jain Kinneri, *Business Laws*, International Book House
7. Sushma Arora, *Business Laws*, Taxmann Publications.
8. Akhileshwar Pathak, *Legal Aspects of Business*, McGraw Hill Education, 6th ed.
9. P C Tulsian and Bharat Tulsian, *Business Law*, McGraw Hill Education
10. Sharma, J.P. and Sunaina Kanojia, *Business Laws*, Ane Books Pvt. Ltd., New Delhi

**Note: Latest edition of text books may be used.**

## **ESA 1.3: Environmental Studies**

### **CONTENTS**

#### **Unit I: Introduction to environmental Studies and Ecosystems. (4 lectures)**

- 1) Multidisciplinary nature of environmental studies:
- 2) Scope and importance of environmental studies
- 3) What is an ecosystem? Structure and function of ecosystem; Energy flow in an ecosystem; food chain, food webs and ecological succession, ecological pyramid.

#### **Unit 2: Natural Resources: Renewable and non-renewable Resources (7 lectures)**

- 1) Land resources and land use change: Land degradation, soil erosion and desertification.
- 2) Deforestation: causes and impacts due to mining, dam building on environment, forests, biodiversity and tribal populations
- 3) Water: use and over-exploitations of surface and ground water, floods, droughts, conflicts over water (international and inter-state).
- 4) Energy resources: Renewable and non-renewable energy sources, use of alternate energy sources, growing energy needs.

#### **Unit 3: Biodiversity and conservation (8 lectures)**

- 1) Levels of biological diversity; genetic, species and ecosystem diversity; Bio geographic zones of India, global biodiversity hot spots.
- 2) India as a mega-biodiversity nation: Endangered and endemic species of India.
- 3) Threats to biodiversity: Habitat loss, poaching of wildlife, man-wildlife conflicts; conservation of biodiversity; in-situ and ex-situ conservation of biodiversity.
- 4) Ecosystem and biodiversity services; Ecological, economic, social, ethical, aesthetic and informational value.

#### **Unit 4: Environmental Pollution, Policies and Practices (10 lectures)**

- 1) Environmental pollution: types, causes, effects and controls: Air, water, soil and noise pollution.
- 2) Nuclear hazards and human health risks
- 3) Solid waste management: Control measures of urban and industrial waste.
- 4) Climate Change, global warming, ozone layer depletion, acid rain and impacts on human communities and agriculture.
- 5) Environment Laws: Introduction and Concept-Environment Protection Act; Air (Prevention and Control of Pollution) Act; Water (Prevention and Control of Pollution) Act; Wild life Protection Act; Forest Conservation Act.

#### **Unit 5: Human Communities and the Environment (4 lectures)**

- 1) Human population growth: Impacts on environment, human health and welfare.
- 2) Resettlement and rehabilitation of project affected persons, case studies.
- 3) Disaster management: floods, earthquake, cyclones and landslides.
- 4) Environmental communication and public awareness.

**Field Work and Assignment****Internal mark: 30**

- 1) Students should submit a report at during the semester based on the field visit to a local polluted site-air/water/solid waste.
- 2) Assignments/ Seminar/ class test etc

**Suggested Readings:**

- 1) Carson, R. 2002. *Silent Spring*. Houghton Mifflin Harcourt.
- 2) Gadgil, M., & Guha, R. 1993. *This Fissured Land: An Ecological History of India*. Univ. of California Press.
- 3) Gleeson, B. and Low, N. (eds.) 1999. *Global Ethics and Environment*, London, Routledge.
- 4) Gleick, P. H. 1993. *Water in Crisis*. Pacific Institute for Studies in Dev., Environment & Security. Stockholm Env. Institute, Oxford Univ. Press.
- 5) Groom, Martha J., Gary K. Meffe, and Carl Ronald Carroll. *Principles of Conservation Biology*. Sunderland: Sinauer Associates, 2006.
- 6) Grumbine, R. Edward, and Pandit, M.K. 2013. Threats from India's Himalaya dams. *Science*, 339: 36-37.
- 7) McCully, P. 1996. *Rivers no more: the environmental effects of dams* (pp. 29-64). Zed Books.
- 8) McNeill, John R. 2000. *Something New Under the Sun: An Environmental History of the Twentieth Century*.
- 9) Odum, E.P., Odum, H.T. & Andrews, J. 1971. *Fundamentals of Ecology*. Philadelphia: Saunders.
- 10) Pepper, I.L., Gerba, C.P. & Brusseau, M.L. 2011. *Environmental and Pollution Science*. Academic Press.
- 11) Rao, M.N. & Datta, A.K. 1987. *Waste Water Treatment*. Oxford and IBH Publishing Co. Pvt. Ltd.
- 12) Raven, P.H., Hassenzahl, D.M. & Berg, L.R. 2012. *Environment*. 8th edition. John Wiley & Sons.
- 13) Rosencranz, A., Divan, S., & Noble, M. L. 2001. *Environmental law and policy in India*. Tripathi 1992.
- 14) Sengupta, R. 2003. *Ecology and economics: An approach to sustainable development*. OUP.
- 15) Singh, J.S., Singh, S.P. and Gupta, S.R. 2014. *Ecology, Environmental Science and Conservation*. S. Chand Publishing, New Delhi.
- 16) Sodhi, N.S., Gibson, L. & Raven, P.H. (eds). 2013. *Conservation Biology: Voices from the Tropics*. John Wiley & Sons.
- 17) Thapar, V. 1998. *Land of the Tiger: A Natural History of the Indian Subcontinent*.
- 18) Warren, C. E. 1971. *Biology and Water Pollution Control*. WB Saunders.
- 19) Wilson, E. O. 2006. *The Creation: An appeal to save life on earth*. New York: Norton.
- 20) World Commission on Environment and Development. 1987. *Our Common Future*. Oxford University



## **COG 1.4: Financial Accounting**

**Duration: 3 hrs. Marks: 100 Lectures: 52, Practical: 26**

**Objectives:** The objective of this paper is to help students to acquire conceptual knowledge of the financial accounting and to impart skills for recording various kinds of business transactions.

### **CONTENTS**

**Unit-1:** Basics of Manual Accounting Accounting- concept, objectives, advantages and limitations, types of accounting information; Fundamental accounting assumptions, principles, concepts, and conventions; Salient features of First-Time Adoption of Indian Accounting Standard; International Financial Reporting Standards (IFRS): - Need and procedures Recording of Transactions: Rules of debit and credit: for assets, liabilities, capital, revenue and expenses. Books of original entry: format and recording – Journal Entry Ledger Posting: Trial Balance: Financial statements- Profit and Loss Account, Balance Sheet (13 Lectures)

**Unit-2:** Computerized Accounting System Creating a Company; Configure and Features settings; Creating Accounting Ledgers and Groups; Creating Stock Items and Groups; Vouchers Entry; Generating Reports - Cash Book, Ledger Accounts, Trial Balance, Profit and Loss Account, Balance Sheet, Funds Flow Statement, Cash Flow Statement Selecting and shutting a Company; Backup and Restore data of a Company (26 Practicals)

**Unit 3:** Accounting for Depreciation: Methods of computing depreciation (straight line method and diminishing balance method only) Inventories Valuation Methods: FIFO, LIFO and Weighted Average. (13 Lectures)

**Unit 4:** Accounting for Hire Purchase and Installment Systems: Basic and Simple Problems only Accounting for Partnership Firm: Preparing Accounts of Partnership firm, Admission, and Retirements (13 Lectures)

**Unit 5:** Accounting for Companies Preparation of profit and loss account and balance sheet of corporate entities; Share Capital & Debentures: Issue, forfeiture and reissue of forfeited shares: Issue of rights and bonus shares; Buy back of shares; Issue of Debentures (13 Lectures)

#### **Note:**

1. There shall be 4 Credit Hrs. for Lectures + one Credit hr. (Two Practical Periods per week per batch) for Practical Lab + one credit Hr for Tutorials (per group)
2. Examination Scheme for Computerised Accounting Systems – Practical for 20 marks. The practical examination will be for 1 hour.
3. Theory Exam shall carry 80 marks

#### **Suggested Readings:**

1. J.R. Monga, Financial Accounting: Concepts and Applications. Mayur Paper Backs, New Delhi.
2. M.C.Shukla, T.S. Grewal and S.C.Gupta. Advanced Accounts. Vol.-I. S. Chand & Co., New Delhi
3. S.N. Maheshwari, and. S. K. Maheshwari. Financial Accounting. Vikas Publishing House, New Delhi.
4. Deepak Sehgal. Financial Accounting. Vikas Publishing H House, New Delhi.
5. Bhushan Kumar Goyal and HN Tiwari, Financial Accounting, International Book House
6. Tulsian, P.C. Financial Accounting, Pearson Education.

Note: Latest edition of the text books should be used.

## Semester - II

### COC 2.1: CORPORATE ACCOUNTING

**Duration: 3 hrs. Marks: 100 Lectures: 65**

**Objectives:** To help the students to acquire the conceptual knowledge of the corporate accounting and to learn the techniques of preparing the financial statements.

#### Contents

##### Unit 1. Accounting for Share Capital & Debentures

**13 Lectures**

Issue, forfeiture and reissue of forfeited shares: concept & process of book building; Issue of rights and bonus shares; Buy back of shares; Redemption of preference shares; Issue and Redemption of Debentures

##### Unit 2. Financial Statements

**16 Lectures**

Preparation of profit and loss account and balance sheet of corporate entities, excluding calculation of managerial remuneration, Disposal of company profits Concepts of funds. Preparation of cash flow statement as per Indian Accounting Standard(Ind- AS): 7.

##### Unit 3. Valuation of Goodwill and Valuation of Shares

**10 Lectures**

Concepts and calculation: simple problem only

##### Unit 4. Amalgamation of Companies

**12 Lectures**

Concepts and accounting treatment as per Accounting Standard: 14 (ICAI) (excluding inter-company holdings). Internal reconstruction: concepts and accounting treatment excluding scheme of reconstruction.

##### Unit 5. Accounts of Holding Companies and Banking Companies 14 lectures

Preparation of consolidated balance sheet with one subsidiary company. Relevant provisions of Accounting Standard: 21 (ICAI).

Difference between balance sheet of banking and non banking company; prudential norms. Asset structure of a commercial bank. Non-performing assets (NPA).

#### Note:

1. **The relevant Indian Accounting Standards in line with the IFRS for all the above topics should be covered.**
2. **Any revision of relevant Indian Accounting Standard would become applicable immediately.**

#### Suggested Readings:

1. J.R. Monga, *Fundamentals of Corporate Accounting*. Mayur Paper Backs, New Delhi.
2. M.C. Shukla, T.S. Grewal, and S.C. Gupta. *Advanced Accounts*. Vol.-II. S. Chand & Co., New Delhi.
3. S.N. Maheshwari, and S. K. Maheshwari. *Corporate Accounting*. Vikas Publishing House, New Delhi.
4. Ashok Sehgal, *Fundamentals of Corporate Accounting*. Taxman Publication, New Delhi.
5. V.K. Goyal and Ruchi Goyal,. *Corporate Accounting*. PHI Learning.
6. Jain, S.P. and K.L. Narang. *Corporate Accounting*. Kalyani Publishers, New Delhi.
7. Bhushan Kumar Goyal, *Fundamentals of Corporate Accounting*, International Book House
8. P. C. Tulsian and Bharat Tulsian, *Corporate Accounting*, S.Chand
9. Amitabha Mukherjee, Mohammed Hanif, *Corporate Accounting*, McGraw Hill Education
10. Compendium of Statements and Standards of Accounting. The Institute of Chartered Accountants of India, New Delhi.

**Note: Latest edition of text books may be used.**

## **COC 2.2: CORPORATE LAWS**

**Duration: 3 hrs. Marks: 100 Lectures: 65**

**Objective:** The objective of the course is to impart basic knowledge of the provisions of the Companies Act 2013 and the Depositories Act, 1996. Case studies involving issues in corporate laws are required to be discussed.

### **UNIT 1: Introduction**

**15 Lectures**

Administration of Company Law [including National Company Law Tribunal (NCLT), National Company Law Appellate Tribunal (NCLAT), Special Courts]; Characteristics of a company; lifting of corporate veil; types of companies including one person company, small company, and dormant company; association not for profit; illegal association; formation of company, on-line filing of documents, promoters, their legal position, pre-incorporation contract; on-line registration of a company.

### **UNIT 2: Memorandum of Association, Articles of Association, Prospectus**

**15 Lectures**

Memorandum of association, Articles of association, Doctrine of constructive notice and indoor management, prospector-shelf and red herring prospectus, misstatement in prospectus, GDR; book-building; issue, allotment and forfeiture of share, transmission of shares, buyback and provisions regarding buyback; issue of bonus shares.

### **UNIT 3: Management**

**15 Lectures**

Classification of directors, women directors, independent director, small shareholder's director; disqualifications, director identity number (DIN); appointment; Legal positions, powers and duties; removal of directors; Key managerial personnel, managing director, manager;  
*Meetings:* Meetings of shareholders and board of directors; Types of meetings, Convening and conduct of meetings, Requisites of a valid meeting, postal ballot, meeting through video conferencing, e-voting. Committees of Board of Directors - Audit Committee, Nomination and Remuneration Committee, Stakeholders Relationship Committee, Corporate Social Responsibility Committee

### **UNIT 4:**

**15 Lectures**

*Dividends, Accounts, Audit:* Provisions relating to payment of Dividend, Provisions relating to Books of Account, Provisions relating to Audit, Auditors' Appointment, Rotation of Auditors, Auditors' Report, Secretarial Audit.

*Winding Up:* Concept and modes of Winding Up.

**Insider Trading, Whistle Blowing:** Insider Trading; meaning & legal provisions; Whistle blowing: Concept and Mechanism.

## **EGA 2.3: BUSINESS COMMUNICATION**

**Duration: 3 hrs. Marks: 50 Lectures: 30**

**Objective:** To equip students of the B.Com (Hons.) course effectively to acquire skills in reading, writing, comprehension and communication, as also to use electronic media for business communication.

### **Contents:**

#### **Unit 1: Introduction:**

**6 Lecture**

Nature of Communication, Process of Communication, Types of Communication (verbal & Non Verbal), Importance of Communication, Different forms of Communication Barriers to Communication Causes, Linguistic Barriers, Psychological Barriers, Interpersonal Barriers, Cultural Barriers, Physical Barriers, Organizational Barriers

#### **Unit 2: Business Correspondence:**

**6 Lecture**

Letter Writing, presentation, Inviting quotations, Sending quotations, Placing orders, Inviting tenders, Sales letters, claim & adjustment letters and social correspondence, Memorandum, Inter - office Memo, Notices, Agenda, Minutes, Job application letter, preparing the Resume.

#### **Unit 3: Report Writing:**

**6 Lecture**

Business reports, Types, Characteristics, Importance, Elements of structure, Process of writing, Order of writing, the final draft, check lists for reports.

#### **Unit 4: Vocabulary:**

**6 Lecture**

Words often confused, Words often misspelt, Common errors in English.

#### **Unit 5: Oral Presentation:**

**6 Lecture**

Importance, Characteristics, Presentation Plan, Power point presentation, Visual aids.

### **Suggested Readings:**

1. Bovee, and Thill, *Business Communication Essentials*, Pearson Education
2. Shirley Taylor, *Communication for Business*, Pearson Education
3. Locker and Kaczmarek, *Business Communication: Building Critical Skills*, McGraw Hill Education
4. Herta A Murphy, Herbert W Hildebrandt, Jane P. Thomas, *Effective Business Communication (SIE)*, McGraw Hill Education
5. Dona Young, *Foundations of Business Communication: An Integrative Approach*, McGraw Hill Education
6. Raymond V. Lesikar, Marie E. Flatley, Kathryn Rentz, Paula Lentz, and Neerja Pande, *Business Communication: Connecting in a Digital World (SIE)*, McGraw Hill Educatio

## UNIT 5: Depositories Law

5 Lectures

The Depositories Act 1996 – Definitions; rights and obligations of depositories; participants issuers and beneficial owners; inquiry and inspections, penalty.

### Suggested Readings:

1. MC Kuchhal, *Modern Indian Company Law*, Shri Mahavir Book Depot (Publishers), Delhi.
2. GK Kapoor and Sanjay Dhamija, *Company Law*, Bharat Law House, Delhi.
3. Anil Kumar, *Corporate Laws*, Indian Book House, Delhi
4. Reena Chadha and Sumant Chadha, *Corporate Laws*, Scholar Tech Press, Delhi.
5. Avtar Singh, *Introduction to Company Law*, Eastern Book Company
6. Ramaiya, *A Guide to Companies Act*, LexisNexis, Wadhwa and Buttersworth.
7. *Manual of Companies Act, Corporate Laws and SEBI Guideline*, Bharat Law House, New Delhi,.
8. *A Compendium of Companies Act 2013, along with Rules*, by Taxmann Publications.
9. Gower and Davies, *Principles of Modern Company Law*, Sweet & Maxwell
10. Sharma, J.P., *An Easy Approach to Corporate Laws*, Ane Books Pvt. Ltd., New Delhi

**Note: Latest edition of text books may be used.**

## COG 2.4: COST ACCOUNTING

**Duration: 3 hours Marks: 100 Lectures: 65**

**Objective:** To acquaint the students with basic concepts used in cost accounting, various methods involved in cost ascertainment and cost accounting book keeping systems.

### CONTENTS:

#### **Unit 1: Introduction (6 Lectures)**

Meaning, objectives and advantages of cost accounting; Difference between cost accounting and financial accounting; Cost concepts and classifications; Elements of cost; Installation of a costing system; Role of a cost accountant in an organization. Preparation of cost sheet.

#### **Unit 2: Elements of Cost: Material and Labour (14 Lectures)**

- a. *Materials*: Material/inventory control techniques. Accounting and control of purchases, storage and issue of materials. Methods of pricing of materials issues — FIFO, LIFO, Simple Average, Weighted Average, Replacement, Standard Cost. Treatment of Material Losses
- b. *Labour*: Accounting and Control of labour cost. Time keeping and time booking. Concept and treatment of idle time, over time, labour turnover and fringe benefits. Methods of wage payment and the Incentive schemes- Halsey, Rowan, Taylor's Differential piece wage.

#### **Unit 3: Elements of Cost: Overheads (8 Lectures)**

Classification, allocation, apportionment and absorption of overheads; Under- and overabsorption; Capacity Levels and Costs; Treatments of certain items in costing like interest on capital, packing expenses, bad debts, research and development expenses; Activity based cost allocation.

#### **Unit 4: Methods of Costing (28 Lectures)**

Unit costing, Job costing, Contract costing, Process costing (process losses, valuation of work in progress, joint and by-products), Service costing (only transport).

#### **Unit 5: Book Keeping in Cost Accounting (9 Lectures)**

Integral and non-integral systems; Reconciliation of cost and financial accounts

### Suggested Reading:

1. Charles T. Horngren, Srikant M. Datar, Madhav V. Rajan, *Cost Accounting: A*

#### **Managerial Emphasis, Pearson Education.**

2. Drury, Colin. *Management and Cost Accounting*. Cengage Learning.
3. Jawahar Lal, *Cost Accounting*. McGraw Hill Education
4. Nigam, B.M. Lall and I.C. Jain. *Cost Accounting: Principles and Practice*. PHI Learning
5. Rajiv Goel, *Cost Accounting*. International Book House
6. Singh, Surender. *Cost Accounting*, Scholar Tech Press, New Delhi.
7. Jain, S.P. and K.L. Narang. *Cost Accounting: Principles and Methods*. Kalyani Publishers
8. Arora, M.N. *Cost Accounting – Principles and Practice*. Vikas Publishing House, New Delhi.
9. Maheshwari, S.N. and S.N. Mittal. *Cost Accounting: Theory and Problems*. Shri Mahavir Book Depot, New Delhi.
10. Iyengar, S.P. *Cost Accounting*. Sultan Chand & Sons
11. H.V. Jhamb, *Fundamentals of Cost Accounting*, Ane Books Pvt. Ltd.

**Note: Latest edition of text books may be used.**

## Semester - III

### COC 3.1: HUMAN RESOURCE MANAGEMENT

**Duration: 3 hrs. Marks: 100 Lectures: 65**

**Objective:** The objective of the course is to acquaint students with the techniques and principles to manage human resource of an organisation.

#### **Unit 1: Introduction**

**13 Lectures**

Human Resource Management: Concept and Functions, Role, Status and competencies of HR Manager, HR Policies, Evolution of HRM, HRM vs HRD. Emerging Challenges of Human Resource Management; Workforce diversity; Empowerment; Downsizing; VRS; Human Resource Information System

#### **Unit 2: Acquisition of Human Resource**

**13 Lectures**

Human Resource Planning- Quantitative and Qualitative dimensions; job analysis – job description and job specification; Recruitment – Concept and sources; Selection – Concept and process; test and interview; placement and induction

#### **Unit 3: Training and Development**

**13 Lectures**

Concept and Importance; Identifying Training and Development Needs; Designing Training Programmes; Role-Specific and Competency-Based Training; Evaluating Training Effectiveness; Training Process Outsourcing; Management Development; Career Development.

#### **Unit 4: Performance Appraisal**

**13 Lectures**

Nature, objectives and importance; Modern techniques of performance appraisal; potential appraisal and employee counseling; job changes - transfers and promotions; Compensation: concept and policies; job evaluation; methods of wage payments and incentive plans; fringe benefits; performance linked compensation.

#### **Unit 5: Maintenance**

**13 Lectures**

Employee health and safety; employee welfare; social security; Employer-Employee relations- an overview; grievance-handling and redressal; Industrial Disputes: causes and settlement machinery

#### **Suggested Readings:**

1. Gary Dessler. *A Framework for Human Resource Management*. Pearson Education.
2. DeCenzo, D.A. and S.P. Robbins, *Personnel/Human Resource Management*, Pearson Education.
3. Bohlendar and Snell, *Principles of Human Resource Management*, Cengage Learning
4. Ivancevich, John M. *Human Resource Management*. McGraw Hill.
5. Wreather and Davis. *Human Resource Management*. Pearson Education.
6. Robert L. Mathis and John H. Jackson. *Human Resource Management*. Cengage Learning.
7. TN Chhabra, *Human Resource Management*, Dhanpat Rai & Co., Delhi
8. Biswajeet Pattanayak, *Human Resource Management*, PHI Learning

**Note: Latest edition of text books may be used.**

## **COC 3.2: INCOME TAX LAW AND PRACTICE**

**Duration: 3 hrs. Marks: 100      Lectures: 65,**

**Objective:** To provide basic knowledge and equip students with application of principles and provisions of Income-tax Act, 1961 and the relevant Rules.

### **Unit 1: Introduction**

**10 Lectures**

**Basic concepts:** Income, agricultural income, person, assessee, assessment year, previous year, gross total income, total income, maximum marginal rate of tax; Permanent Account Number(PAN)

**Residential status;** Scope of total income on the basis of residential status  
Exempted income under section 10

### **Unit 2: Computation of Income under different heads-1**

**18 Lectures**

Income from Salaries; Income from house property

### **Unit 3: Computation of Income under different heads-2**

**13 Lectures**

Profits and gains of business or profession; Capital gains; Income from other sources

### **Unit 4: Computation of Total Income and Tax Liability**

**14 Lectures**

Income of other persons included in assessee's total income; Aggregation of income and set-off and carry forward of losses; Deductions from gross total income; Rebates and reliefs  
Computation of total income of individuals and firms; Tax liability of an individual and a firm;

### **Unit 5: TDS and Tax Authorities**

**10 Lectures**

- a. Tax Deducted at source: Advance Payment of Tax.
- b. Appeal and Appellate Authority.
- c. Central Board of Direct Taxes and other Authorities: Power and functions

### **Suggested readings:**

1. Singhanian, Vinod K. and Monica Singhanian. *Students' Guide to Income Tax, University Edition*. Taxmann Publications Pvt. Ltd., New Delhi.
2. Ahuja, Girish and Ravi Gupta. *Systematic Approach to Income Tax*. Bharat Law House, Delhi.

### **Journals**

1. *Income Tax Reports*. Company Law Institute of India Pvt. Ltd., Chennai.
2. *Taxman*. Taxman Allied Services Pvt. Ltd., New Delhi.
3. *Current Tax Reporter*. Current Tax Reporter, Jodhpur.

**Latest edition of text books may be used**



## **COC 3.3: MANAGEMENT PRINCIPLES AND APPLICATION**

**Duration: 3 hrs. Marks: 100 Lectures: 65**

**Objective:** The objective of the course is to provide the student with an understanding of basic management concepts, principles and practices.

### **Unit 1: Introduction**

**Lectures: 13**

- a. Concept: Need for Study, Managerial Functions – An overview; Co-ordination: Essence of Managership
- b. Evolution of the Management Thought, Classical Approach – Taylor, Fayol, Neo-Classical and Human Relations Approaches – Mayo, Hawthorne Experiments, Behavioural Approach, Systems Approach, Contingency Approach – Lawrence & Lorsch, MBO - Peter F. Drucker, Re-engineering - Hammer and Champy, Michael Porter – Five-force analysis, Three generic strategies and value chain, analysis, Senge's Learning Organisation, 'Fortune at the Bottom of the Pyramid' – C.K. Prahalad.

### **Unit 2: Planning**

**Lectures: 13**

- a. Types of Plan – An overview to highlight the differences
- b. Strategic planning – Concept, process, Importance and limitations
- c. Environmental Analysis and diagnosis (Internal and external environment) – Definition, Importance and Techniques (SWOT/TOWS/WOTS-UP, BCG Matrix, Competitor Analysis), Business environment; Concept and Components
- d. Decision-making – concept, importance; Committee and Group Decision-making, Process, Perfect rationality and bounded rationality, Techniques (qualitative and quantitative, MIS, DSS)

### **Unit 3: Organising, Staffing and Communication.**

**Lectures: 13**

Concept and process of organising – An overview, Span of management, Different types of authority (line, staff and functional), Decentralisation, Delegation of authority. Formal and Informal Structure; Principles of Organising; Network Organisation Structure

*Staffing:* Concept of staffing, staffing process.

*Communication:* Concept, purpose, process; Oral and written communication; Formal and informal communication networks, Barriers to communication, Overcoming barriers to communication

### **Unit 4: Motivation and Leadership.**

**Lectures: 13**

*Motivation:* Concept, Importance, extrinsic and intrinsic motivation; Major

Motivation theories - Maslow's Need-Hierarchy Theory; Herzberg's Two-factor

Theory, Vroom's Expectation Theory, Porter's Lawer Model, McClelland Need Achievement Theory and Equity Theory.

*Leadership:* Concept, Importance, Major theories of Leadership (Likert's scale theory, Blake and Mouten's Managerial Grid theory, House's Path Goal theory, Fred Fielder's situational Leadership), Transactional leadership, Transformational Leadership, Transforming Leadership.

### **Unit 5: Control**

**Lectures: 13**

- a. *Control:* Concept, Process, Limitations, Principles of Effective Control, Major Techniques of control - Ratio Analysis, ROI, Budgetary Control, EVA, PERT/CPM.
- b. Emerging issues in Management

**Suggested Readings:**

1. Harold Koontz and Heinz Weihrich, *Essentials of Management: An International and Leadership Perspective*, McGraw Hill Education.
2. Stephen P Robbins and Madhushree Nanda Agrawal, *Fundamentals of Management: Essential Concepts and Applications*, Pearson Education.
3. George Terry, *Principles of Management*, Richard D. Irwin
4. Newman, Summer, and Gilbert, *Management*, PHI
5. James H. Donnelly, *Fundamentals of Management*, Pearson Education.
6. B.P. Singh and A.K. Singh, *Essentials of Management*, Excel Books
7. Griffin, *Management Principles and Application*, Cengage Learning
8. Robert Kreitner, *Management Theory and Application*, Cengage Learning
9. TN Chhabra, *Management Concepts and Practice*, Dhanpat Rai & Co. (Pvt. Ltd.), New Delhi
10. Peter F Drucker, *Practice of Management*, Mercury Books, London

**Note: Latest edition of text books may be used.**

## **COS 3.4: E-COMMERCE**

**Duration: 3 hrs. Marks: 100 Lectures: 40, Practical Lab 26**

**Objectives:** To enable the student to become familiar with the mechanism for conducting business transactions through electronic means

### **Contents**

#### **Unit 1: Introduction: (8 Lectures)**

Meaning, nature, concepts, advantages, disadvantages and reasons for transacting online, types of E-Commerce, e-commerce business models (introduction, key elements of a business model and categorizing major E-commerce business models), forces behind e-commerce.

#### **Technology used in E-commerce:**

The dynamics of world wide web and internet (meaning, evolution and features); Designing, building and launching e-commerce website (A systematic approach involving decisions regarding selection of hardware, software, outsourcing vs. in-house development of a website)

#### **Unit 2: Security and Encryption: (8 Lectures)**

Need and concepts, the e-commerce security environment: (dimension, definition and scope of e-security), security threats in the E-commerce environment (security intrusions and breaches, attacking methods like hacking, sniffing, cyber-vandalism etc.), technology solutions (Encryption, security channels of communication, protecting networks and protecting servers and clients),

#### **Unit 3: IT Act 2000 and Cyber Crimes (8 Lectures)**

IT Act 2000: Definitions, Digital signature, Electronic governance, Attribution, acknowledgement and dispatch of electronic records, Regulation of certifying authorities, Digital signatures certificates, Duties of subscribers, Penalties and adjudication, Appellate Tribunal, Offences and Cyber-crimes

#### **Unit 4: E-payment System: (8 Lectures, 4 Practical Lab)**

Models and methods of e-payments (Debit Card, Credit Card, Smart Cards, e-money), digital signatures (procedure, working and legal position), payment gateways, online banking (meaning, concepts, importance, electronic fund transfer, automated clearing house, automated ledger posting), risks involved in e-payments.

#### **Unit 5: On-line Business Transactions: (8 Lectures, 4 Practical Lab)**

(a) Meaning, purpose, advantages and disadvantages of transacting online, E-commerce applications in various industries like {banking, insurance, payment of utility bills, online marketing, e-tailing (popularity, benefits, problems and features), online services (financial, travel and career), auctions, online portal, online learning, publishing and entertainment} Online shopping (amazon, snapdeal, alibaba, flipkart, etc.)

#### **(b) Website designing (18 Practical Lab)**

Introduction to HTML; tags and attributes: Text Formatting, Fonts, Hypertext Links, Tables, Images, Lists, Forms, Frames, Cascading Style Sheets.

**Note:**

- 1. There shall be 3 Credit Hrs. for lectures + One Credit hr. (2 Practical periods per week per batch) for Practical Lab**
- 2. Latest edition of text books may be used.**

**Suggested Readings**

1. Kenneth C. Laudon and Carlo Guercio Traver, *E-Commerce*, Pearson Education.
2. David Whiteley, *E-commerce: Strategy, Technology and Applications*, McGraw Hill Education
3. Bharat Bhaskar, *Electronic Commerce: Framework, Technology and Application, 4th Ed.*, McGraw Hill Education
4. PT Joseph, *E-Commerce: An Indian Perspective*, PHI Learning
5. KK Bajaj and Debjani Nag, *E-commerce*, McGraw Hill Education
6. TN Chhabra, *E-Commerce*, Dhanpat Rai & Co.
7. Sushila Madan, *E-Commerce*, Taxmann
8. TN Chhabra, Hem Chand Jain, and Aruna Jain, *An Introduction to HTML*, Dhanpat Rai & Co.

## **COG 3.5: INCOME TAX LAW AND PRACTICE**

**Duration: 3 hrs. Marks: 100 Lectures: 65**

**Objective:** To provide basic knowledge and equip students with application of principles and provisions of Income-tax Act, 1961 and the relevant Rules.

### **Unit 1: Introduction**

**10 Lectures**

**Basic concepts:** Income, agricultural income, person, assessee, assessment year, previous year, gross total income, total income, maximum marginal rate of tax; Permanent Account Number (PAN)

**Residential status;** Scope of total income on the basis of residential status of Individual only Exempted income under section 10

### **Unit 2: Computation of Income under different heads-1**

**18 Lectures**

Income from Salaries; Income from house property (Only Simple and basic concepts)

### **Unit 3: Computation of Income under different heads-2**

**13 Lectures**

Profits and gains of business or profession; Capital gains; Income from other sources(Only Simple and basic concepts)

### **Unit 4: Computation of Total Income and Tax Liability**

**14 Lectures**

Income of other persons included in assessee's total income; Aggregation of income and set-off and carry forward of losses; Deductions from gross total income; Rebates and reliefs; Computation of total income of individuals and firms; Tax liability of an individual

### **Unit 5: TDS and Tax Authorities**

**10 Lectures**

- a. Tax Deducted at source: Advance Payment of Tax.
- b. Appeal and Appellate Authority.
- c. Central Board of Direct Taxes and other Authorities: Power and functions.

### **Suggested readings:**

1. Singhania, Vinod K. and Monica Singhania. *Students' Guide to Income Tax, University Edition*. Taxmann Publications Pvt. Ltd., New Delhi.
2. Ahuja, Girish and Ravi Gupta. *Systematic Approach to Income Tax*. Bharat Law House, Delhi.

### **Journals**

1. *Income Tax Reports*. Company Law Institute of India Pvt. Ltd., Chennai.
2. *Taxman*. Taxman Allied Services Pvt. Ltd., New Delhi.
3. *Current Tax Reporter*. Current Tax Reporter, Jodhpur.

**Latest edition of text books may be used**

## Semester - IV

### COC 4.1: COST ACCOUNTING

**Duration: 3 hrs. Marks: 100 Lectures: 65**

**Objective:** To acquaint the students with basic concepts used in cost accounting, various methods involved in cost ascertainment and cost accounting book keeping systems.

#### CONTENTS:

##### **Unit 1: Introduction (6 Lectures)**

Meaning, objectives and advantages of cost accounting; Difference between cost accounting and financial accounting; Cost concepts and classifications; Elements of cost; Installation of a costing system; Role of a cost accountant in an organization. Preparation cost Sheet.

##### **Unit 2: Elements of Cost: Material and Labour (14 Lectures)**

- a. *Materials:* Material/inventory control techniques. Accounting and control of purchases, storage and issue of materials. Methods of pricing of materials issues — FIFO, LIFO, Simple Average, Weighted Average, Replacement, Standard Cost. Treatment of Material Losses
- b. *Labour:* Accounting and Control of labour cost. Time keeping and time booking. Concept and treatment of idle time, over time, labour turnover and fringe benefits. Methods of wage payment and the Incentive schemes- Halsey, Rowan, Taylor's Differential piece wage.

##### **Unit 3: Elements of Cost: Overheads (8 Lectures)**

Classification, allocation, apportionment and absorption of overheads; Under- and overabsorption; Capacity Levels and Costs; Treatments of certain items in costing like interest on capital, packing expenses, bad debts, research and development expenses; Activity based cost allocation.

##### **Unit 4: Methods of Costing (28 Lectures)**

Unit costing, Job costing, Contract costing, Process costing (process losses, valuation of work in progress, joint and by-products), Service costing (only transport).

##### **Unit 5: Book Keeping in Cost Accounting (9 Lectures)**

Integral and non-integral systems; Reconciliation of cost and financial accounts

#### **Suggested Reading:**

1. Charles T. Horngren, Srikant M. Datar, Madhav V. Rajan, *Cost Accounting: A*

#### **Managerial Emphasis, Pearson Education.**

2. Drury, Colin. *Management and Cost Accounting*. Cengage Learning.
3. Jawahar Lal, *Cost Accounting*. McGraw Hill Education
4. Nigam, B.M. Lall and I.C. Jain. *Cost Accounting: Principles and Practice*. PHI Learning
5. Rajiv Goel, *Cost Accounting*. International Book House
6. Singh, Surender. *Cost Accounting*, Scholar Tech Press, New Delhi.
7. Jain, S.P. and K.L. Narang. *Cost Accounting: Principles and Methods*. Kalyani Publishers
8. Arora, M.N. *Cost Accounting – Principles and Practice*. Vikas Publishing House, New Delhi.
9. Maheshwari, S.N. and S.N. Mittal. *Cost Accounting: Theory and Problems*. Shri Mahavir Book Depot, New Delhi.
10. Iyengar, S.P. *Cost Accounting*. Sultan Chand & Sons
11. H.V. Jhamb, *Fundamentals of Cost Accounting*, Ane Books Pvt. Ltd.

**Note: Latest edition of text books may be used.**

## **COC 4.2: BUSINESS MATHEMATICS AND COMPUTER APPLICATIONS**

**Duration: 3 hrs. Marks: 100 Lectures: 56, Practical: 10**

**Objective:** The objective of this course is to familiarize the students with the basic mathematical tools and computer application with an emphasis on applications to business and economic situations.

### **Unit 1: Matrices Lectures**

**(20 Lectures)**

Definition of a matrix. Types of matrices; Algebra of matrices. Inverse of a matrix, Adjoint of a matrix; Solution of system of linear equations (having unique solution and involving not more than three variables) using matrix inversion Method and Cremer's Rule. Applications of matrices to solution of simple business and economic problems

### **Unit 2: Differential Calculus**

**(23 Lectures)**

Mathematical functions and their types- linear, quadratic, polynomial, exponential, Concepts of limit, and continuity of a function. Concept of differentiation; Rules of differentiation. Partial Differentiation: Partial derivatives up to second order; Homogeneity of functions and Euler's theorem; Total differentials; Maxima and Minima of functions (involving second or third order derivatives) relating to cost, revenue and profit.

### **Unit 3: Basic Mathematics of Finance**

**(10 Lectures)**

Simple and compound interest Rates of interest – nominal, effective and continuous – their interrelationships; Compounding and discounting of a sum using different types of rates

### **Unit 4: Introduction**

**(2 Lectures)**

Introduction to Computer-Characteristics of Computers, The Computer System, Parts of Computers; Computer H/W Setup, Configuration, Networking, Mobile H/W Device and types; Operating System-Introduction to Operating Systems, An overview of various Computer & Mobile OS & Application (UN IX / Linux, DOS, Windows, Android, windows mobile, iOS Like), Features of latest Windows Operating Systems & its Management & Networking (Installation, backup, security, User control), Usage of payment gateways

### **Unit 5: Introduction to essential tools**

**(1 Lecture) (10 Practical)**

Introduction to facilities & commonly used features of:

**a) Word:** Working with word document, Inserting, filling and formatting a table, Mail Merge including linking with Access Database, Creating Macros -Sending E-mail from Word Import / Export of files Converting Word Document to Web Document, PDF files Hyperlinks; OLE Security features in MS-Word - Protection of Documents - Password for Documents - Checking for viruses in macros, referencing, creating bibliography, manage sources and citations, review documents.

**b) PowerPoint:** Preparing Presentations, Slides, Handouts, Speaker's Notes - Outlines - Media Clips - Charts – Graphs, Adding the Transitions to the Slide Show - Special effects in detail, - Setting Slide timings.

**c) Excel:** Creating a work book, Rearranging Worksheet, Organizing Charts and graphs, Ranges and Functions & Formulae: Mathematical, Statistical Financial Functions such as NPV (Net present value), Future value, IRR (Internal Rate of Return), EMI (Equated Monthly Installments, Compounding Yearly, periodic and monthly) - Auto Calculate Using Names in a Formula, Formula Editing, Macros, Consolidation of Data & Data Analysis - Sorting List, Filter & More Filtering Techniques - Consolidate data in multiple worksheets - What-if analysis, Goal Seek Scenario Manager, Solver, Lookup Function - Sub Totals, Nested-IF, Statistical Analysis; Data Validation & Protection - Create a drop-down list from a range of cells - Apply data validation to cells - Copy data validation setting, remove data validation - Find cell that have data validation, protect cell data, using password to protect sheet and workbook. - Use validation to create dependent list; Pivot table Reports & Pivot Chart Reports.

**Suggested Readings:**

1. Mizrahi and Sullivan. *Mathematics for Business and Social Sciences*. Wiley and Sons.
2. Budnick, P. *Applied Mathematics*. McGraw Hill Education.
3. Ayres, Frank Jr. *Schaum's Outlines Series: Theory and Problems of Mathematics of Finance*. McGraw Hill Education.
4. Wikes, F.M., *Mathematics for Business, Finance and Economics*. Thomson Learning.
5. Thukral, J.K., *Mathematics for Business Studies*.
6. Soni, R.S., *Business Mathematics*. Ane Books, New Delhi.
7. Singh J. K., *Business Mathematics*. Himalaya Publishing House.
8. Rajaraman, V. *Introduction to Information Technology*. PHI.
9. Eliason, A.L., *On-line Business Computer-Application Science Research Associates Chicago*.
10. Curtis D. Frye, *step by step Microsoft Excel 2010*, PHI
11. Leon M. And Leon A. *Fundamentals of information technology*. Leon, Vikas (4) Software manuals
12. Sinha, Pradeep K and Preeti Sinha. *Foundation of Computer*. BPB publication
13. Basandra, Suresh K. *Management Information System*. Wheeler Publication, New Delhi – Allahabad.

**Note: Latest edition of text books may be used.**



## COC 4.3: PRINCIPLES OF MARKETING

**Duration: 3 hrs. Marks: 100 Lectures: 65**

**Objective:** The objective of this course is to provide basic knowledge of concepts, principles, tools and techniques of marketing.

### Contents:

#### Unit 1: Introduction:

**13 Lectures**

Nature, scope and importance of marketing; Evolution of marketing; Selling vs Marketing; Marketing mix, Marketing environment: concept, importance, and components (Economic, Demographic, Technological, Natural, Socio-Cultural and Legal).

#### Unit 2:

**13 Lectures**

- a. **Consumer Behaviour:** Nature and Importance, Consumer buying decision process; Factors influencing consumer buying behaviour.
- b. **Market segmentation:** concept, importance and bases; Target market selection; Positioning concept, importance and bases; Product differentiation vs. market segmentation.

#### Unit 3: Product:

**13 Lectures**

Concept and importance, Product classifications; Concept of product mix; Branding, packaging and labeling; Product-Support Services; Product life-cycle; New Product Development Process; Consumer adoption process.

#### Unit 4:

**13 Lectures**

- a. **Pricing:** Significance. Factors affecting price of a product. Pricing policies and strategies.
- b. **Distribution Channels and Physical Distribution:** Channels of distribution - meaning and importance; Types of distribution channels; Functions of middle man; Factors affecting choice of distribution channel; Wholesaling and retailing; Types of Retailers; e-tailing, Physical Distribution.

#### Unit 5:

**13 Lectures**

- a. **Promotion:** Nature and importance of promotion; Communication process; Types of promotion: advertising, personal selling, public relations & sales promotion, and their distinctive characteristics; Promotion mix and factors affecting promotion mix decisions;
- b. **Recent developments in marketing:** Social Marketing, online marketing, direct marketing, services marketing, green marketing, Rural marketing; Consumerism

### Suggested Readings:

1. Kotler, Philip, Gary Armstrong, Prafulla Agnihotri and Ehsanul Haque. *Principles of Marketing*. 13th edition. Pearson Education.
2. Michael, J. Etzel, Bruce J. Walker, William J Stanton and Ajay Pandit. *Marketing: Concepts and Cases*. (Special Indian Edition)., McGraw Hill Education
3. William D. Perreault, and McCarthy, E. Jerome., *Basic Marketing*. Pearson Education.
4. Majaro, Simon. *The Essence of Marketing*. Pearson Education, New Delhi.
5. The Consumer Protection Act 1986.
6. Iacobucci and Kapoor, *Marketing Management: A South Asian Perspective*. Cengage Learning.
7. Dhruv Grewal and Michael Levy, *Marketing*, McGraw Hill Education.
8. Chhabra, T.N., and S. K. Grover. *Marketing Management*. Fourth Edition. Dhanpat Rai & Company.
9. Neeru Kapoor, *Principles of Marketing*, PHI Learning
10. Rajendra Maheshwari, *Principles of Marketing*, International Book House

## **COS 4.4: Entrepreneurship**

**Duration: 3 hrs. Marks: 100 Lectures: 50**

**Objective:** The purpose of the paper is to orient the learner toward entrepreneurship as a career option and creative thinking and behavior.

### **Contents:**

#### **Unit 1: Introduction**

**10 lectures**

Meaning, elements, determinants and importance of entrepreneurship and creative behavior; Entrepreneurship and creative response to the society's problems and at work; Dimensions of entrepreneurship: intrapreneurship, technopreneurship, cultural entrepreneurship, international entrepreneurship, netpreneurship, ecopreneurship, and social entrepreneurship

#### **Unit 2: Entrepreneurship in India**

**10 lectures**

Concept of business groups and role of business houses and family business in India; The contemporary role models in Indian business: their values, business philosophy and behavioural orientations; Conflict in family business and its resolution

#### **Unit 3: Support System**

**10 lectures**

Public and private system of stimulation, support and sustainability of entrepreneurship. Requirement, availability and access to finance, marketing assistance, technology, and industrial accommodation, Role of industries/entrepreneur's associations and self-help groups, The concept, role and functions of business incubators, angel investors, venture capital and private equity fund.

#### **Unit 4: Sources of business ideas and tests of feasibility.**

**10 lectures**

Significance of writing the business plan/ project proposal; Contents of business plan/ project proposal; Designing business processes, location, layout, operation, planning & control; preparation of project report (various aspects of the project report such as size of investment, nature of product, market potential may be covered); Project submission/ presentation and appraisal thereof by external agencies, such as financial/non-financial institutions

#### **Unit 5: Mobilising Resources**

**10 Lectures**

Mobilising resources for start-up. Accommodation and utilities; Preliminary contracts with the vendors, suppliers, bankers, principal customers; Contract management: Basic start-up problems

### **Suggested Readings:**

1. Kuratko and Rao, *Entrepreneurship: A South Asian Perspective*, Cengage Learning.
2. Robert Hisrich, Michael Peters, Dean Shepherd, *Entrepreneurship*, McGraw-Hill Education
3. Desai, Vasant. *Dynamics of Entrepreneurial Development and Management*. Mumbai, Himalaya Publishing House.
4. Dollinger, Mare J. *Entrepreneurship: Strategies and Resources*. Illinois, Irwin.
5. Holt, David H. *Entrepreneurship: New Venture Creation*. Prentice-Hall of India, New Delhi.
6. Plsek, Paul E. *Creativity, Innovation and Quality*. (Eastern Economic Edition), New Delhi: Prentice-Hall of India. ISBN-81-203-1690-8.
7. Singh, Nagendra P. *Emerging Trends in Entrepreneurship Development*. New Delhi: ASEED.
8. SS Khanka, *Entrepreneurial Development*, S. Chand & Co, Delhi.
9. K Ramachandran, *Entrepreneurship Development*, McGraw-Hill Education
10. SIDBI Reports on Small Scale Industries Sector.

**Note: Latest edition of text books may be used.**

## **COG 4.5: BANKING AND INSURANCE**

**Duration: 3 hrs. Marks: 100 Lectures: 65**

**Objective:** To impart knowledge about the basic principles of the banking and insurance

### **Contents**

#### **Unit 1: Introduction:**

**13 Lectures**

Origin of banking: definition, banker and customer relationship, General and special types of customers, Types of deposits, Origin and growth of commercial banks in India. Financial Services offered by banks, changing role of commercial banks, types of banks

#### **Unit 2: Cheques and Paying Banker**

**13 Lectures**

Crossing and endorsement - meaning, definitions, types and rules of crossing. Duties, Statutory protection in due course, collecting bankers: duties, statutory protection for holder in due course, Concept of negligence.

#### **Unit 3: Bank Lending**

**13 Lectures**

Principles of sound lending, Secured vs. unsecured advances, Types of advances, Advance against various securities.

#### **Unit 4: Internet Banking**

**13 Lectures**

Meaning, Benefits, Home banking, Mobile banking, Virtual banking, E-payments, ATM Card/Biometric card, Debit/Credit card, Smart card, NEFT, RTGS, ECS (credit/debit), E-money, Electronic purse, Digital cash.

#### **Unit 5: Insurance**

**13 Lectures**

Basic concept of risk, Types of business risk, Assessment and transfer, Basic principles of utmost good faith, Indemnity, Economic function, Proximate cause, Subrogation and contribution, Types of insurance: Life and Non-life, Re-insurance, Risk and return relationship, Need for coordination. Power, functions and Role of IRDA, Online Insurance

### **Suggested readings:**

1. Agarwal, O.P., *Banking and Insurance*, Himalaya Publishing House
2. Satyadevi, C., *Financial Services Banking and Insurance*, S.Chand
3. Suneja, H.R., *Practical and Law of Banking*, Himalaya Publishing House
4. Chabra, T.N., *Elements of Banking Law*, Dhanpat Rai and Sons
5. Arthur, C. and C. William Jr., *Risk Management and Insurance*, McGraw Hill
6. Saxena, G.S; *Legal Aspects of Banking Operations*, Sultan Chand and Sons
7. Varshney, P.N., *Banking Law and Practice*, Sultan Chand and Sons
8. Jyotsna Sethi and Nishwan Bhatia, *Elements of Banking and Insurance*, PHI Learning **Note: Latest edition of text books may be used.**

## Semester - V

### COC 5.1: BUSINESS STATISTICS

**Duration: 3 hrs. Marks: 100 Lectures: 52, Practical Lab: 26**

**Objective:** The objective of this course is to familiarize students with the basic statistical tools used for managerial decision-making.

#### **Unit 1: Statistical Data and Descriptive Statistics (14 Lectures)**

- a) Nature and Classification of data: univariate, bivariate and multivariate data; time-series and cross-sectional data, Sampling: Populations and samples, Parameters and Statistics, Descriptive and inferential statistics; Sampling methods (including Simple Random sampling, Stratified sampling, Systematic sampling, Judgement sampling, and Convenience sampling) Concept of Sampling distributions and Theory of Estimation: Point and Interval estimation of means (large samples) and proportions.
- b) Measures of Central Tendency
  - i. Mathematical averages including arithmetic mean, geometric mean and harmonic mean. Properties and applications.
  - ii. Positional Averages; Mode and Median (and other partition values including quartiles, deciles, and percentiles) (including graphic determination)
- c) Measures of Variation: absolute and relative. Range, quartile deviation, mean deviation, standard deviation, and their coefficients, Properties of standard deviation/variance
- d) Skewness: Meaning, Measurement using Karl Pearson and Bowley's measures; Concept of Kurtosis

#### **Unit 2: Probability and Probability Distributions (10 Lectures)**

- a) Theory of Probability. Approaches to the calculation of probability; Calculation of event probabilities. Addition and multiplication laws of probability (Proof not required); Conditional probability and Bayes' Theorem (Proof not required)
- b) Expectation and variance of a random variable
- c) Probability distributions:
  - i. Binomial distribution: Probability distribution function, Constants, Shape, Fitting of binomial distribution
  - ii. Poisson distribution: Probability function, (including Poisson approximation to binomial distribution), Constants, Fitting of Poisson distribution
  - iii. Normal distribution: Probability distribution function, Properties of normal curve, Calculation of probabilities

#### **Unit 3: Simple Correlation and Regression Analysis (10 Lectures)**

- a. **Correlation Analysis:** Meaning of Correlation: simple, multiple and partial; linear and non-linear, Correlation and Causation, Scatter diagram, Pearson's co-efficient of correlation; calculation and properties (Proof not required). Correlation and Probable error; Rank Correlation
- b. **Regression Analysis:** Principle of least squares and regression lines, Regression equations and estimation; Properties of regression coefficients; Relationship between Correlation and Regression coefficients; Standard Error of Estimate and its use in interpreting the results.

#### **Unit 4: Index Numbers (10 Lectures)**

Meaning and uses of index numbers; Construction of index numbers: fixed and chain base: univariate and composite. Aggregative and average of relatives – simple and weighted Tests of adequacy of index

numbers, Base shifting, splicing and deflating. Problems in the construction of index numbers; Construction of consumer price indices: Important share price indices, including BSE SENSEX and NSE NIFTY

### **Unit 5: Time Series Analysis**

**(8 Lectures)**

Components of time series; Additive and multiplicative models; Trend analysis: Fitting of trend line using principle of least squares – linear, second degree parabola and exponential. Conversion of annual linear trend equation to quarterly/monthly basis and vice-versa; Moving averages; Seasonal variations: Calculation of Seasonal Indices using Simple averages, Ratio-to-trend, and Ratio-to-moving averages methods. Uses of Seasonal Indices

**Practical Lab: 26: The students will be familiarized with software (Spreadsheet and/or SPSS) and the statistical and other functions contained therein related to formation of frequency distributions and calculation of averages, measures of Dispersion and variation, correlation and regression coefficient.**

**Note: 1. There shall be 4 Credit Hrs. for Lectures + one Credit hr. (Two Practical Periods per week per batch) for Practical Lab + one credit Hr for Tutorials (per group) 2. Latest edition of text books may be used.**

#### **Suggested Readings:**

1. Levin, Richard, David S. Rubin, Sanjay Rastogi, and HM Siddiqui. *Statistics for Management*, 7th ed., Pearson Education.
2. David M. Levine, Mark L. Berenson, Timothy C. Krehbiel, P. K. Viswanathan, *Business Statistics: A First Course*, Pearson Education.
3. Siegel Andrew F. *Practical Business Statistics*. McGraw Hill Education.
4. Gupta, S.P., and Archana Agarwal. *Business Statistics*, Sultan Chand and Sons, New Delhi.
5. Vohra N. D., *Business Statistics*, McGraw Hill Education.
6. Murray R Spiegel, Larry J. Stephens, Narinder Kumar. *Statistics (Schaum's Outline Series)*, McGraw Hill Education.
7. Gupta, S.C. *Fundamentals of Statistics*. Himalaya Publishing House.
8. Anderson, Sweeney, and Williams, *Statistics for Students of Economics and Business*, Cengage Learning.

## **COC 5.2: FUNDAMENTALS OF FINANCIAL MANAGEMENT**

**Duration: 3 hrs. Marks: 100 Lectures: 65**

**Objective:** To familiarize the students with the principles and practices of financial management.

### **CONTENTS**

#### **Unit 1: Introduction (8 Lectures)**

Nature, scope and objective of Financial Management, Time value of money, Risk and return (including Capital Asset Pricing Model), Valuation of securities – Bonds and Equities

#### **Unit 2: Investment Decisions (15 lectures)**

The Capital Budgeting Process, Cash flow Estimation, Payback Period Method, Accounting Rate of Return, Net Present Value (NPV), Net Terminal Value, Internal Rate of Return (IRR), Profitability Index, Capital budgeting under Risk – Certainty Equivalent Approach and Risk-Adjusted Discount Rate.

#### **Unit 3: Financing Decisions (15 lectures)**

Cost of Capital and Financing Decision: Sources of long-term financing Estimation of components of cost of capital. Methods for Calculating cost of equity capital, Cost of Retained Earnings, Cost of Debt and Cost of Preference Capital, Weighted Average cost of capital (WACC) and Marginal cost of capital. Capital structure –Theories of Capital Structure (Net Income, Net Operating Income, MMHypothesis, Traditional Approach). Operating and financial leverage; Determinants of capital structure

#### **Unit 4: Dividend Decisions (12 Lectures)**

Theories for Relevance and irrelevance of dividend decision for corporate valuation; Cash and stock dividends; Dividend policies in practice.

#### **Unit 5: Working Capital Decisions (15 lectures)**

Concepts of working capital, the risk-return trade off, sources of short-term finance, working capital estimation, cash management, receivables management, inventory management and payables management.

### **Suggested Readings**

1. James C. Van Horne and Sanjay Dhamija, *Financial Management and Policy*, Pearson Education
2. Levy H. and M. Sarnat. *Principles of Financial Management*. Pearson Education
3. Brigham and Houston, *Fundamentals of Financial Management*, Cengage Learning
4. Khan and Jain. *Basic Financial Management*, McGraw Hill Education
5. Prasanna Chandra, *Fundamentals of Financial Management*. McGraw Hill Education
6. Singh, J.K. *Financial Management- text and Problems*. Dhanpat Rai and Company, Delhi.
7. Rustagi, R.P. *Fundamentals of Financial Management*. Taxmann Publication Pvt. Ltd.
8. Singh, Surender and Kaur, Rajeev. *Fundamentals of Financial Management*. Mayur Paperback, New Delhi.
9. Pandey, I.M. *Financial Management*. Vikas Publications.
10. Bhabatosh Banerjee, *Fundamentals of Financial Management*, PHI Learning

## **COD 5.3: BANKING AND INSURANCE**

**Duration: 3 hrs. Marks: 100 Lectures: 65**

**Objective:** To impart knowledge about the basic principles of the banking and insurance

### **Contents**

#### **Unit 1: Introduction:**

**13 Lectures**

Origin of banking: definition, banker and customer relationship, General and special types of customers, Types of deposits, Origin and growth of commercial banks in India. Financial Services offered by banks, changing role of commercial banks, types of banks

#### **Unit 2: Cheques and Paying Banker**

**13 Lectures**

Crossing and endorsement - meaning, definitions, types and rules of crossing. Duties, Statutory protection in due course, collecting bankers: duties, statutory protection for holder in due course, Concept of negligence.

#### **Unit 3: Banking Lending**

**13 Lectures**

Principles of sound lending, Secured vs. unsecured advances, Types of advances, Advances against various securities.

#### **Unit 4: Internet Banking**

**13 Lectures**

Meaning, Benefits, Home banking, Mobile banking, Virtual banking, E-payments, ATM Card/Biometric card, Debit/Credit card, Smart card, NEFT, RTGS, ECS (credit/debit), E-money, Electronic purse, Digital cash.

#### **Unit 5: Insurance**

**13 Lectures**

Basic concept of risk, Types of business risk, Assessment and transfer, Basic principles of utmost good faith, Indemnity, Economic function, Proximate cause, Subrogation and contribution, Types of insurance: Life and Non-life, Re-insurance, Risk and return relationship, Need for coordination. Power, functions and Role of IRDA, Online Insurance

### **Suggested readings:**

1. Agarwal, O.P., *Banking and Insurance*, Himalaya Publishing House
2. Satyadevi, C., *Financial Services Banking and Insurance*, S.Chand
3. Suneja, H.R., *Practical and Law of Banking*, Himalya Publishing House
4. Chabra, T.N., *Elements of Banking Law*, Dhanpat Rai and Sons
5. Arthur, C. and C. William Jr., *Risk Management and Insurance*, McGraw Hill
6. Saxena, G.S; *Legal Aspects of Banking Operations*, Sultan Chand and Sons
7. Varshney, P.N., *Banking Law and Practice*, Sultan Chand and Sons
8. Jyotsna Sethi and Nishwan Bhatia, *Elements of Banking and Insurance*, PHI Learning

**\Note: Latest edition of text books may be used.**

## **COD 5.4: Financial Markets, Institutions and Financial Services**

**Duration: 3 hrs. Marks: 100 Lectures: 65**

**Objective:** To provide the student a basic knowledge of financial markets and institutions and to familiarise them with major financial services in India.

### **Contents**

#### **Unit 1: Introduction (8 Lectures)**

**Financial System and its Components** – financial markets and institutions; Financial intermediation; Flow of funds matrix; Financial system and economic development; An overview of Indian financial system

#### **Unit 2: Financial Markets (17 Lectures)**

Money market – functions, organisation and instruments. Role of central bank in money market; Indian money market – An overview

Capital Markets – functions, organisation and instruments. Indian debt market; Indian equity market – primary and secondary markets; Role of stock exchanges in India

#### **Unit 3: Financial Institutions (20 Lectures)**

Commercial banking – introduction, its role in project finance and working capital finance; Development Financial institutions (DFIs) – An overview and role in Indian economy; Life and non-life insurance companies in India; Mutual Funds – Introduction and their role in capital market development. Non-banking financial companies (NBFCs).

#### **Unit 4: Financial Services (8 Lectures)**

Overview of financial services industry: Merchant banking – pre and post issue management, underwriting. Regulatory framework relating to merchant banking in India

#### **Unit 5: Leasing and hire–purchase (22 Lectures)**

Consumer and housing finance; Venture capital finance; Factoring services, bank guarantees and letter of credit; Credit rating; Financial counseling.

### **Suggested Readings:**

1. LM Bhole, and Jitendra Mahakud. *Financial Institution and Markets*, McGraw-Hill Education
2. Khan, M.Y. *Indian Financial System*, McGraw-Hill Education.
3. Dhanekar. *Pricing of Securities*. New Delhi: Bharat Publishing House.
4. Prasanna, Chandra. *Financial Management: Theory and Practice*. McGraw-Hill Education.
5. Clifford Gomez, *Financial Markets, Institutions and Financial Services*, PHI Learning
6. MY Khan and PK Jain. *Financial Services*. McGraw Hill Education.
7. Singh, J.K. *Venture Capital Financing in India*. Dhanpat Rai and Company, New Delhi.
8. Annual Reports of Major Financial Institutions in India.

**Note: Latest edition of text books may be used**



## Semester - VI

### COC 6.1: AUDITING AND CORPORATE GOVERNANCE

**Duration: 3 hrs. Marks: 100 Lectures: 65**

**Objective:** To provide knowledge of auditing principles, procedures and techniques in accordance with current legal requirements and professional standards and to give an overview of the principles of Corporate Governance and Corporate Social Responsibility

#### **Contents:**

#### **Unit 1: Introduction**

**(12 Lectures)**

**Auditing:** Introduction, Meaning, Objectives, Basic Principles and Techniques; Classification of Audit, Audit Planning, Internal Control – Internal Check and Internal Audit; Audit Procedure –Vouching and verification of Assets & Liabilities.

#### **Unit 2: Audit of Companies**

**(13 Lectures)**

Audit of Limited Companies: Company Auditor- Qualifications and disqualifications, Appointment, Rotation, Removal, Remuneration, Rights and Duties Auditor's Report- Contents and Types. Liabilities of Statutory Auditors under the Companies Act 2013

#### **Unit 3: Special Areas of Audit**

**(12 Lectures)**

Special Areas of Audit: Special features of Cost audit, Tax audit, and Management audit; Recent Trends in Auditing: Basic considerations of audit in EDP Environment; Computer aided audit techniques and tools; Auditing Standards; Relevant Case Studies/Problems;

#### **Unit 4: Corporate Governance**

**(12 Lectures)**

Conceptual framework of Corporate Governance: Theories & Models, Broad Committees; Corporate Governance Reforms. Major Corporate Scandals in India and Abroad: Common Governance Problems Noticed in various Corporate Failures. Codes & Standards on Corporate Governance

#### **Unit 5: Business Ethics and Corporate Social Responsibility**

**(16 Lectures)**

Morality and ethics, business values and ethics, approaches and practices of business ethics, corporate ethics, ethics program, codes of ethics, ethics committee; Ethical Behaviour: Concepts and advantages; Rating Agencies; Green Governance; Clause 49 and Listing Agreement.

Concept of CSR, Corporate Philanthropy, Strategic Planning and Corporate Social Responsibility; Relationship of CSR with Corporate Sustainability; CSR and Business Ethics, CSR and Corporate Governance; CSR provisions under the Companies Act 2013; CSR Committee; CSR Models, Codes, and Standards on CSR

**Suggested Readings:**

1. Ravinder Kumar and Virender Sharma, *Auditing Principles and Practice*, PHI Learning
2. Aruna Jha, *Auditing*. Taxmann Publication.
3. A. K. Singh, and Gupta Lovleen. *Auditing Theory and Practice*. Galgotia Publishing Company.
4. Anil Kumar, *Corporate Governance: Theory and Practice*, Indian Book House, New Delhi
5. MC Kuchhal, *Modern Indian Company Law*, Shri Mahaveer Book Depot. (Publishers). (Relevant Chapters)
6. KV Bhanumurthy and Usha Krishna, *Politics, Ethics and Social Responsibility of Business*, Pearson Education
7. Erik Banks, *Corporate Governance: Financial Responsibility, Controls and Ethics*, Palgrave Macmillan
8. N Balasubramanian, *A Casebook on Corporate Governance and Stewardship*, McGraw Hill Education
9. B.N. Ghosh, *Business Ethics and Corporate Governance*, McGraw Hill Education
10. SK Mandal, *Ethics in Business and Corporate Governance*, McGraw Hill Education
11. Bob Tricker, *Corporate Governance-Principles, Policies, and Practice* (Indian Edition), Oxford University Press
12. Christine Mallin, *Corporate Governance (Indian Edition)*, Oxford University Press
13. Relevant Publications of ICAI on *Auditing* (CARO)
14. Sharma, J.P., *Corporate Governance, Business Ethics, and CSR*, Ane Books Pvt Ltd, New Delhi

**Note: Latest edition of text books may be used.**

## **COC 6.2: INDIRECT TAX LAW**

**Duration: 3 hrs. Marks: 100 Lectures: 65**

**Objective:** To provide basic knowledge and equip students with application of principles and provisions of Indirect Taxes in India

### **Course Inputs:**

#### **Unit I: Introduction**

**(10 Lectures)**

Basis for Taxation, Direct tax and Indirect Tax: Features of Indirect Tax. Difference between direct taxes and indirect taxes: Advantages and disadvantages of direct taxes and indirect taxes; constitutional validity, Administration and relevant procedures; Union List, State List and Concurrent List.

#### **Unit 2: Customs Act, 1962 (including latest amendments) (15 Lectures)**

Definition, Power to prohibit importation and exportation of goods; Levy of and exemption from customs duties-dutiable goods, duty on pilfered goods, valuation of goods for purposes of assessment, date for determination of rate of duty and tariff valuation of imported goods, date for determination of rate of duty and tariff valuation of export goods, power to grant exemption from duty.

#### **Unit 3: The Goods and Service Tax, 2017 (including latest amendments to the GST Act) (15 Lectures)**

Preliminary; Administration; Levy and collection of Tax, Taxes under GST- CGST, SGST, IGST, UTGST.

#### **Unit 4:**

**(15 Lectures)**

Registration; Input tax credit; Accounts and record; Returns.

#### **Unit 5:**

**(10 Lectures)**

Payment of Tax; Refunds; Assessment; Audit, Appeals and revision

### **Suggested Readings:**

1. Singhanian Vinod K. and Monica Singhanian, *Students' Guide to Indirect Taxes*, Taxmann Publications Pvt. Ltd., Delhi.
2. V.S. Datey. *Indirect Tax Law and practice*, Taxmann Publications Pvt. Ltd., Delhi,
2. Sanjeev Kumar. *Systematic Approach to Indirect Taxes*,
3. S. S. Gupta. *Service Tax -How to meet your obligation* Taxmann Publications Pvt. Ltd., Delhi,
4. Grish Ahuja and Ravi Gupta, *Indirect Taxes*, Flair Publication Pvt Ltd
5. Indirect Taxation study notes ( Intermediate). The Institute of Cost Accountants of India
6. Custom Act, 1962
7. The Central Goods and Services Tax Act, 2017. The Gazette of India, Ministry of Law and Justice (Legislative Department)

### **Note:**

1. **This paper will be replaced by the Goods and Service Tax Law whenever this law is enforced.**
2. **Latest edition of text books may be used.**

## **COD 6.3: COST AND MANAGEMENT ACCOUNTING**

**Duration: 3 hrs. Marks: 100 Lectures: 65**

**Objective:** To acquaint the students with basic concepts used in cost and management accounting and various methods involved in cost ascertainment systems.

### **CONTENTS:**

#### **Unit 1: Introduction**

**(13 Lectures)**

Meaning, objectives and advantages of cost accounting, Difference between financial, cost, and management accounting and. Cost concepts and classifications, Role of a cost accountant in an organization. Elements of Cost: Materials, Labour, and Overhead

#### **Unit 2: Methods of Costing**

**(13 Lectures)**

Unit costing, Job costing. Contract Costing. Process costing (process losses, valuation of work in progress, joint and by-products) Service costing (only transport).

#### **Unit 3: Budgeting and budgetary control**

**(13 Lectures)**

Concept of budget and budgetary control, objectives, merits, and limitations, Budget administration, Functional budgets, Fixed and flexible budgets, Zero base budget,

#### **Unit 4: Standard costing**

**(13 Lectures)**

Standard costing and variance analysis: Meaning of standard cost and standard costing: advantages, limitations and applications, Variance analysis – material, labour, overhead and sales variances

#### **Unit 5: Marginal Costing**

**(13 Lectures)**

Cost-Volume-Profit Analysis: Break-even analysis-algebraic and graphic methods. Contribution /sales ratio, key factor. Margin of safety. Angle of incidence. Determination of cost indifference point. Decision making: Costs for decision making, variable costing and differential analysis as aids in making decisions – fixation of selling price, exploring new market, make or buy, product mix, operate or shut down, seller process further.

### **Suggested Reading:**

1. Lal, Jawahar. *Cost Accounting*. Tata McGraw Hill Publishing Co., New Delhi.
2. Nigam, B.M. Lall and I.C. Jain. *Cost Accounting: Principles and Practice*. Prentice Hall of India, New Delhi.
3. Arora, M.N. *Cost Accounting – Principles and Practice*. Vikas Publishing House, New Delhi.
4. Maheshwari, S.N. and S.N. Mittal. *Cost Accounting: Theory and Problems*. Shri Mahabir Book Depot, New Delhi.
5. Jain, S.P. and K.L. Narang. *Cost Accounting: Principles and Methods*. Kalyani Publishers, Jalandhar.
6. H.V. Jhamb, “*Management Accounting*”, ANE Books Pvt. Ltd. New Delhi
7. Singh, S. K. and Gupta Lovleen. *Management Accounting – theory and Practice*. Pinnacle Publishing House.
8. Rajiv Goel, *Cost Accounting*. International Book House
9. Singh, Surender. *Cost Accounting*, Scholar Tech Press, New Delhi.

## **COD 6.4: BUSINESS RESEARCH METHODS AND PROJECT WORK**

**Duration: 3 hrs. Marks: 100 Lectures: 65**

**Objective:** This course aims at providing the general understanding of business research and the methods of business research. The course will impart learning about how to collect, analyze, present and interpret data.

### **Section A: Business Research Methods 50 Marks**

#### **Unit 1: Introduction**

**10 Lectures**

Meaning of research; Scope of Business Research; Purpose of Research – Exploration, Description, Explanation; Unit of Analysis – Individual, Organization, Groups, and Data Series; Conception, Construct, Attributes, Variables, and Hypotheses

#### **Unit 2: Research Process**

**10 Lectures**

An Overview; Problem Identification and Definition; Selection of Basic Research Methods- Field Study, Laboratory Study, Survey Method, Observational Method, Existing Data Based Research, Longitudinal Studies, Panel Studies

#### **Unit 3: Measurement and Hypothesis Testing**

**19 Lectures**

**Measurement:** Definition; Designing and writing items; Uni-dimensional and Multi-dimensional scales; Measurement Scales- Nominal, Ordinal, Interval, Ratio; Ratings and Ranking Scale, Thurstone, Likert and Semantic Differential scaling, Paired Comparison; Sampling –Steps, Types, Sample Size Decision; Secondary data sources

**Hypothesis Testing:** Tests concerning means and proportions; ANOVA, Chi-square test and other Non-parametric tests Testing the assumptions of Classical Normal Linear Regression

### **Section B: Project Report Marks 50**

#### **Unit 4: Report Preparation 26 Lectures**

Meaning, types and layout of research report; Steps in report writing; Citations, Bibliography and Annexure in report; JEL Classification

#### **Note:**

1. There shall be a written examination of 50% Marks on the basis of Unit 1: to III.
2. The student will write a project report under the supervision of a faculty member assigned by the college/institution based on field work. The Project Report carries 50% Marks and will be evaluated by University appointed examiners.

## Department of Botany

Semester	Core Course (C)	Ability enhancement Compulsory course (A)	Skill enhancement Course (S)	Discipline Specific Elective (D)	Generic Elective (G)
First	BTC 1.1 Phycology and Microbiology	EGA 1.3 English Communication			BTG 1.4 Plant Ecology and Taxonomy
	BTC 1.2 Biomolecules and cell Biology				
Second	BTC 2.1 Mycology and Phytopathology	ESA 2.3 Environmental Studies			BTG 2.4 Plant Anatomy And Embryology(6)
	BTC 2.2 Archegoniate and Paleobotany				
Third	BTC 3.1 Morphology and Anatomy		BTS 3.4 Herbal Technology		BTG 3.5 Plant Physiology and Metabolism
	BTC 3.2 Economic Botany				
	BTC 3.3 Genetics				
Fourth	BTC 4.1 Molecular Biology		BTS 4.4 Mushroom Cultivation		BTG 4.5 Economic Botany and Biotechnology
	BTC 4.2 Plant Ecology and Phytogeography				
	BTC 4.3 Plant systematics				
Fifth	BTC 5.1 Reproductive Biology of Angiosperms			BTD 5.3 Plant Breeding	
	BTC 5.2 Plant Physiology			BTD 5.4 Natural Resource Management	
Sixth	BTC 6.1 Plant			BTD 6.3 Horticulture	
TOTAL CREDITS	14X6=84	2X2=4	2X2=4	4X6=24	4X6=24

- The figure in the brackets indicates the total number of credits. Total Credit is 140.
- Ability Enhancement courses are to be offered /taught by other departments.
- 12 papers each to be taught by the department in both odd and even semesters.
- Student from the discipline have to take up any 4 generic paper from other department of their choice.

SEMESTER	COURSE OPTED	COURSE NAME	CREDITS
1	Ability Enhancement compulsory course-I	English Communications	2
	Core Course-I	Phycology and Microbiology	4
	Core Course-I Practical	Phycology and Microbiology	2
	Core Course-II	Biomolecules and cell Biology.	4
	Core Course-II Practical	Biomolecules and Cell Biology- Practical	2
	Generic elective- I	Plant Ecology and Taxonomy	4
	Generic elective- II Practical/Tutorial	Plant Ecology and Taxonomy Practical	2
2	Ability Enhancement Compulsory Course-II	Environmental Studies	2
	Core course-III	Mycology and Phytopathology	4
	Core Course-III Practical	Mycology and Phytonathology- Practical	2
	Core course-IV	Archegoniate & Paleobotany	4
	Core Course-IV Practical	Archegoniate & Paleobotany Practical	2
	Generic Elective -2	Plant Anatomy and Embryology	4
	Generic Elective -2 Practical	Plant Anatomy and Embryology Practical	2
3	Core course-V	Morphology and Anatomy	4
	Core course-V Practical	Morphology and Anatomy- Practical	2
	Core Course-VI	Economic Botany	4
	Core course- VI Practical	Economic Botany-Practical	2
	Core Course-VII	Genetics	4

	<b>Core Course-VII Practical</b>	Genetics- Practical	2
	<b>Skill Enhancement Course-1</b>	Herbal Technology	2
	<b>Generic Elective -3</b>	Plant Physiology and Metabolism	4
	<b>Generic Elective -3 Practical</b>	Plant Physiology and Metabolism Practical	2
4	<b>Core course-VIII</b>	Molecular Biology	4
	<b>Core course-VIII Practical</b>	Molecular Biology Practical	2
	<b>Core Course-IX</b>	Plant Ecology and Phytogeography	4
	<b>Core course-IX Practical</b>	Plant Ecology and Phytogeography-Practical	2
	<b>Core Course-X</b>	Plant Systematics	4
	<b>Core Course-X Practical</b>	Plant Systematics- Practical	2
	<b>Skill Enhancement Course-2</b>	Mushroom Cultivation	2
	<b>Generic Elective -4</b>	Economic Botany and Biotechnology	4
	<b>Generic Elective -4 Practical</b>	Economic Botany and Biotechnology Practical	2
5	<b>Core course-XI</b>	Reproductive Biology of Angiosperms	4
	<b>Core course-XI Practical</b>	Reproductive Biology of Angiosperms - Practical	2
	<b>Core course-XII</b>	Plant Physiology	4
	<b>Core course-XII Practical</b>	Plant Physiology- Practical	2
	<b>Discipline Specific Elective-1</b>	Plant Breeding	4
	<b>Discipline Specific Elective- 1 Practical</b>	Plant Breeding Practical	2
	<b>Discipline Specific Elective- 2</b>	Natural Resource Management	4
	<b>Discipline Specific Elective- 2 Practical</b>	Natural Resource Management Practical	2



	<b>Practical/Tutorial</b>		
6	<b>Core course-XIII</b>	Plant Metabolism	4
	<b>Core course-XIII Practical</b>	Plant Metabolism-Practical	2
	<b>Core course-XIV</b>	Plant Biotechnology	4
	<b>Core course-XIV Practical/Tutorial</b>	Plant Biotechnology-Practical	2
	<b>Discipline Centric Elective-3</b>	Horticulture Practices and Post Harvest Technology	4
	<b>Discipline Centric Elective- 3 Practical</b>	Horticulture Practices and Post Harvest Technology Practical	2
	<b>Discipline Centric Elective- 4</b>	Biostatistics	4
	<b>Discipline Centric Elective- 4 Practical/tutorial</b>	Biostatistics Practical	2
		<b>Total</b>	<b>140</b>

## **Structure of B.Sc. Honours Botany under CBCS**

### **Core Courses**

1. Phycology and Microbiology
2. Biomolecules and Cell Biology
3. Mycology and Phytopathology
4. Archegoniate and Paleobotany
5. Morphology and Anatomy
6. Economic Botany
7. Genetics
8. Molecular Biology
9. Plant Ecology and Phytogeography
10. Plant Systematics
11. Reproductive Biology of Angiosperms
12. Plant Physiology
13. Plant Metabolism
14. Plant Biotechnology

### **Discipline Specific Electives**

1. Plant Breeding
2. Natural Resource Management
3. Horticulture Practices and Post-Harvest Technology
4. Biostatistics

### **Generic Electives**

1. Plant Ecology and Taxonomy
2. Plant Anatomy and Embryology
3. Plant Physiology and Metabolism
4. Economic Botany and Biotechnology

### **Ability Enhancement Course Compulsory**

1. Environmental Studies
2. English/MIL Communication

### **Skill Enhancement Courses Elective**

1. Herbal Technology
2. Mushroom Cultivation

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## Semester-I

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### Core Course

### Phycology and Microbiology (BTC 1.1)

(Credits: Theory-4, Practical-2)

#### THEORY

Lectures: 60

#### Unit 1: Introduction to microbial world

Microbial nutrition, growth and metabolism. Economic importance of viruses with reference to vaccine production, role in research, medicine and diagnostics, as causal organisms of plant diseases. Economic importance of bacteria with reference to their role in agriculture and industry(fermentation and medicine) **(7 lectures)**

#### Unit 2: Viruses

Discovery, physiochemical and biological characteristics; classification (Baltimore), general structure with special reference to viroids and prions; replication (general account), DNA virus(T-phage), lytic and lysogenic cycle; RNA virus (TMV), Retrovirus (HIV). **(7 lectures)**

#### Unit 3: Bacteria

Discovery, general characteristics; Types-archaebacteria, eubacteria, wall-less forms (mycoplasma and spheroplasts); Cell structure; Shapes of bacteria; classification of bacteria (Bergey's), Nutritional types; Reproduction-vegetative, asexual and recombination (conjugation, transformation and transduction). **(7 lectures)**

#### Unit 4: Algae

General characteristics; Ecology and distribution; range of thallus organization; Cell structure and components; cell wall, pigment system, reserve food (of only groups represented in the syllabus), flagella; methods of reproduction; Classification; criteria, system of Fritsch, and evolutionary classification of Lee (only upto groups); Significant contributions of important phycologists (F.E. Fritsch, G.M. Smith, R.N. Singh, T.V. Desikachary, H.D. Kumar, M.O.P. Iyengar). Economic importance of algae. **(11 lectures)**

#### Unit 5: Cyanophyta, Xanthophyta, Chlorophyta, Charophyta, Phaeophyta and Rhodophyta

Ecology and occurrence; Range of thallus organization; Cell structure; Reproduction, Morphology and life-cycle of *Nostoc* and *Vaucheria*. General characteristics; Occurrence; Range of thallus organization; Cell structure; Reproduction, Morphology and life-cycles of *Chlamydomonas*, *Oedogonium*, *Chara*. Evolutionary significance of *Prochloron*. Characteristics; Occurrence; Range of thallus organization; Cell structure; Reproduction. Morphology and life-cycles of *Ectocarpus* and *Fucus*. **(28 lectures)**

### Practical

#### Microbiology

1. Electron micrographs/Models of viruses – T-Phage and TMV, Line drawings/ Photographs of Lytic and Lysogenic Cycle.
2. Types of Bacteria to be observed from temporary/permanent slides/photographs. Electron micrographs of bacteria, binary fission, endospore, conjugation, root Nodule.

3. Gram staining of Gram positive and Gram negative bacteria.
4. Endospore staining with malachite green using the (endospores taken from soil bacteria).

### **Phycology**

Study of vegetative and reproductive structures of *Nostoc*, *Chlamydomonas* (electron micrographs), *Oedogonium*, *Chara*, *Vaucheria*, *Ectocarpus*, *Fucus* and *Polysiphonia*, *Prochloron* through electron micrographs, temporary preparations and permanent slides.

### **Suggested Readings**

1. Lee, R.E. (2008). Phycology, Cambridge University Press, Cambridge. 4th edition.
2. Wiley JM, Sherwood LM and Woolverton CJ. (2013) Prescott's Microbiology. 9th Edition. McGraw Hill International.
3. Kumar, H.D. (1999). Introductory Phycology. Affiliated East-West Press, Delhi.
4. Sahoo, D. (2000). Farming the ocean: seaweeds cultivation and utilization. Aravali International, New Delhi.
5. Campbell, N.A., Reece J.B., Urry L.A., Cain M.L., Wasserman S.A. Minorsky P.V., Jackson R.B. (2008). Biology, Pearson Benjamin Cummings, USA. 8th edition.
6. Pelczar, M.J. (2001) Microbiology, 5th edition, Tata McGraw-Hill Co, New Delhi.

## **Biomolecules and Cell Biology (BTC 1.2)**

**(Credits: Theory-4, Practical-2)**

### **THEORY**

**Lectures: 60**

#### **Unit 1: Biomolecules**

**(20 lectures)**

Types and significance of chemical bonds; Structure and properties of water; pH and buffers.

**Carbohydrates:** Nomenclature and classification; Monosaccharides ; Disaccharides; Oligosaccharides and polysaccharides.

**Lipids:** Definition and major classes of storage and structural lipids; Fatty acids structure and functions; Essential fatty acids; Triacylglycerols structure, functions and properties; Phosphoglycerides.

**Proteins:** Structure of amino acids; Levels of protein structure-primary, secondary, tertiary and quaternary; Protein denaturation and biological roles of proteins.

**Nucleic acids:** Structure of nitrogenous bases; Structure and function of nucleotides; Types of nucleic acids; Structure of A, B, Z types of DNA; Types of RNA; Structure of tRNA.

#### **Unit 2: Bioenergetics**

**(4 lectures)**

Laws of thermodynamics, concept of free energy, endergonic and exergonic reactions, coupled reactions, redox reactions. ATP: structure, its role as a energy currency molecule.

#### **Unit 3: Enzymes**

**(6 lectures)**

Structure of enzyme: holoenzyme, apoenzyme, cofactors, coenzymes and prosthetic group; Classification of enzymes; Features of active site, substrate specificity, mechanism of action (activation energy, lock and key hypothesis, induced - fit theory), Michaelis – Menten equation, enzyme inhibition and factors affecting enzyme activity.

#### **Unit 4: The cell and cell division**

**(10 lectures)**

Cell as a unit of structure and function; Characteristics of prokaryotic and eukaryotic cells; Origin of eukaryotic cell (Endosymbiotic theory). Cell division: Mitosis and meiosis; Regulation of cell cycle-checkpoints, role of protein kinases.

#### **Unit 5: Cell wall, plasma membrane and cell organelles**

**(20 lectures)**

Chemistry, structure and function of Plant cell wall. Overview of membrane function; fluid mosaic model; Chemical composition of membranes; Membrane transport – Passive, active and facilitated transport, endocytosis and exocytosis.

**Nucleus:** Structure-nuclear envelope, nuclear pore complex, nuclear lamina, molecular organization of chromatin; nucleolus.

**Cytoskeleton:** Role and structure of microtubules, microfilaments and intermediary filament.

**Chloroplast, mitochondria and peroxisomes:** Structural organization; Function; Semiautonomous nature of mitochondria and chloroplast.

**Endomembrane system:** Endoplasmic Reticulum – Structure, targeting and insertion of proteins in the ER, protein folding, processing; Smooth ER and lipid synthesis, export of proteins and lipids; Golgi Apparatus – organization, protein glycosylation, protein sorting and export from Golgi Apparatus; Lysosomes

### Practical

1. Qualitative tests for carbohydrates, reducing sugars, non-reducing sugars, lipids and proteins.
2. Study of plant cell structure with the help of epidermal peel mount of Onion/*Rhoeo/Crinum*.
3. Demonstration of the phenomenon of protoplasmic streaming in *Hydrilla* leaf.
4. Measurement of cell size by the technique of micrometry.
5. Counting the cells per unit volume with the help of haemocytometer. (Yeast/pollen grains).
6. Study of cell and its organelles with the help of electron micrographs.
7. Cytochemical staining of : DNA- Feulgen and cell wall in the epidermal peel of onion using Periodic Schiff's (PAS) staining technique.
8. Study the phenomenon of plasmolysis and deplasmolysis.
9. Study the effect of organic solvent and temperature on membrane permeability.
10. Study different stages of mitosis and meiosis.

### Suggested Readings

1. Campbell, MK (2012) Biochemistry, 7th ed., Published by Cengage Learning
2. Campbell, PN and Smith AD (2011) Biochemistry Illustrated, 4th ed., Published by Churchill Livingstone
3. Tymoczko JL, Berg JM and Stryer L (2012) Biochemistry: A short course, 2nd ed., W.H. Freeman
4. Berg JM, Tymoczko JL and Stryer L (2011) Biochemistry, W.H. Freeman and Company
5. Nelson DL and Cox MM (2008) Lehninger Principles of Biochemistry, 5th Edition., W.H. Freeman and Company.
6. Karp, G. (2010). Cell Biology, John Wiley & Sons, U.S.A. 6th edition.
7. Hardin, J., Becker, G., Skliensmith, L.J. (2012). Becker's World of the Cell, Pearson Education Inc. U.S.A. 8th edition.
8. Cooper, G.M. and Hausman, R.E. (2009) The Cell: A Molecular Approach. 5th edition. ASM Press & Sunderland, Washington, D.C.; Sinauer Associates, MA. 17
9. Becker, W.M., Kleinsmith, L.J., Hardin. J. and Bertoni, G. P. (2009) The World of the Cell. 7th edition. Pearson Benjamin Cummings Publishing, San Francisco

**Mycology and Phytopathology (BTC 2.1)**  
**(Credits: Theory-4, Practical-2)**  
**THEORY**  
**Lectures: 60**

**Unit 1: Introduction to true fungi; Chytridiomycota and Zygomycota (11 lectures)**

General characteristics; Affinities with plants and animals; Thallus organization; Cell wall composition; Nutrition; Classification.

Characteristic features; Ecology and significance; Thallus organisation; Reproduction; Life cycle with reference to *Synchytrium*, *Rhizopus*.

**Unit 2: Ascomycota and Basidiomycota (18 lectures)**

General characteristics (asexual and sexual fruiting bodies); Life cycle and classification with reference to *Saccharomyces*, *Aspergillus*, *Penicillium* and *Alternaria*.

General characteristics; Ecology; Life cycle and Classification with reference to black stem rust on wheat *Puccinia* (Physiological Specialization), loose and covered smut (symptoms only), *Agaricus*; Bioluminescence, Fairy Rings of Mushroom.

**Unit 3: Allied Fungi, Oomycota and symbiotic associations (11 lectures)**

General characteristics; Status of Slime molds, Classification; Occurrence; Types of plasmodia; Types of fruiting bodies.

General characteristics; Ecology; Life cycle and classification with reference to *Phytophthora*, *Albugo*. Lichen – Occurrence; General characteristics; Growth forms and range of thallus organization; Nature of associations of algal and fungal partners; Reproduction; Mycorrhiza-Ectomycorrhiza. Endomycorrhiza and their significance.

**Unit 4: Applied Mycology (10 Lectures)**

Role of fungi in biotechnology; Application of fungi in food industry (Flavour & texture, Fermentation, Baking, Organic acids, Enzymes, Mycoproteins); Secondary metabolites (Pharmaceutical preparations); Agriculture (Biofertilizers); Mycotoxins; Biological control (Mycofungicides, Mycoherbicides, Mycoinsecticides, Myconematicides); Medical mycology.

**Unit 5: Phytopathology (10 lectures)**

Terms and concepts; General symptoms; Geographical distribution of diseases; Etiology; Symptomology; Host-Pathogen relationships; Disease cycle and environmental relation; prevention and control of plant diseases, and role of quarantine.

Bacterial diseases – Citrus canker and angular leaf spot of cotton. Viral diseases – Tobacco Mosaic viruses, vein clearing. Fungal diseases – Early blight of potato, Black stem rust of wheat, White rust of crucifers.

**Practical**

1. Introduction to the world of fungi (Unicellular, coenocytic/septate mycelium, ascocarps & basidiocarps).
2. *Rhizopus*: study of asexual stage from temporary mounts and sexual structures through permanent slides.
3. *Aspergillus* and *Penicillium*: study of asexual stage from temporary mounts. Study of Sexual stage from permanent slides/photographs.
4. *Peziza*: sectioning through ascocarp.

5. *Alternaria*: Specimens/photographs and temporary mounts.
6. *Puccinia*: Herbarium specimens of Black Stem Rust of Wheat and infected Barberry leaves; sections/ mounts of spores on wheat and permanent slides of both the hosts.
7. *Agaricus*: Specimens of button stage and full grown mushroom; sectioning of gills of *Agaricus*, fairy rings and bioluminescent mushrooms to be shown.
8. Study of phaneroplasmodium from actual specimens and /or photograph. Study of *Stemonitissporangia*.
9. *Albugo*: Study of symptoms of plants infected with *Albugo*; asexual phase study through section/ temporary mounts and sexual structures through permanent slides.
10. Lichens: Study of growth forms of lichens (crustose, foliose and fruticose) on different substrates. Study of thallus and reproductive structures (soredia and apothecium) through permanent slides. Mycorrhizae: ectomycorrhiza and endomycorrhiza (Photographs)
11. Phytopathology: Herbarium specimens of bacterial diseases; Citrus Canker; Angular leaf spot of cotton, Viral diseases: TMV, Vein clearing, Fungal diseases: Early blight of potato, Black stem rust of wheat and White rust of crucifers.

### **Suggested Readings**

1. Agrios, G.N. (1997) Plant Pathology, 4th edition, Academic Press, U.K.
2. Alexopoulos, C.J., Mims, C.W., Blackwell, M. (1996). Introductory Mycology, John Wiley & Sons (Asia) Singapore. 4<sup>th</sup> edition.
3. Webster, J. and Weber, R. (2007). Introduction to Fungi, Cambridge University Press, Cambridge. 3<sup>rd</sup> edition.
4. Sethi, I.K. and Walia, S.K. (2011). Text book of Fungi and Their Allies, Macmillan Publishers India Ltd.
5. Sharma, P.D. (2011). Plant Pathology, Rastogi Publication, Meerut, India.



## Archegoniate and Paleobotany (BTC 2.2)

(Credits: Theory-4, Practical-2)

### THEORY

Lectures: 60

#### Unit 1: Introduction to Archegoniate (4 lectures)

Unifying features of archegoniates; Transition to land habit; Alternation of generations.

#### Unit 2: Bryophytes and type studies of Bryophytes (18 lectures)

General characteristics; Adaptations to land habit; Classification; Range of thallus organization. Classification (up to family), morphology, anatomy and reproduction of *Riccia*, *Marchantia*, *Pellia*, *Porella*, *Anthoceros*, *Sphagnum* and *Funaria*; Reproduction and evolutionary trends in *Riccia*, *Marchantia*, *Anthoceros* and *Funaria* (developmental stages not included). Ecological and economic importance of bryophytes with special reference to *Sphagnum*.

#### Unit 3: Pteridophytes and type studies of Pteridophytes (14 lectures)

General characteristics; Classification; Early land plants (*Cooksonia* and *Rhynia*).

Classification (up to family), morphology, anatomy and reproduction of *Psilotum*, *Selaginella*, *Equisetum* and *Pteris* (Developmental details not to be included). Apogamy, and apospory, heterospory and seed habit, telome theory, stelar evolution; Ecological and economic importance.

#### Unit 4: Gymnosperms (18 lectures)

General characteristics, classification (up to family), morphology, anatomy and reproduction of *Cycas*, *Pinus* and *Gnetum* (Developmental details not to be included); Ecological and economic importance.

#### Unit 5: Paleobotany (6 lectures)

Geological time scale, fossil types and their formation, general account of dominant fossil flora of different ages, paleobotany in relation to exploration of fossil fuel.

### Practical

1. *Riccia*– Morphology of thallus.
2. *Marchantia*- Morphology of thallus, whole mount of rhizoids & Scales, vertical section of thallus through Gemma cup, whole mount of Gemmae (all temporary slides), vertical section of Antheridiophore, Archegoniophore, longitudinal section of Sporophyte (all permanent slides).
3. *Anthoceros*- Morphology of thallus, dissection of sporophyte (to show stomata, spores, pseudoelaters, columella) (temporary slide), vertical section of thallus (permanent slide).
4. *Pellia*, *Porella*- Permanent slides.
5. *Sphagnum*- Morphology of plant, whole mount of leaf (permanent slide only).
6. *Funaria*- Morphology, whole mount of leaf, rhizoids, operculum, peristome, annulus, spores (temporary slides); permanent slides showing antheridial and archegonial heads, longitudinal section of capsule and protonema.
7. *Psilotum*- Study of specimen, transverse section of synangium (permanent slide).

8. ***Selaginella***- Morphology, whole mount of leaf with ligule, transverse section of stem, whole mount of strobilus, whole mount of microsporophyll and megasporophyll (temporary slides), section of strobilus (permanent slide).
9. ***Equisetum***- Morphology, transverse section of internode, longitudinal section of strobilus, transverse section of strobilus, whole mount of sporangiophore, whole mount of spores (wet and dry) (temporary slide), transverse section of rhizome (permanent slide).
10. ***Pteris***- Morphology, transverse section of rachis, vertical section of sporophyll, wholemount of sporangium, whole mount of spores (temporary slides), transverse section of rhizome, whole mount of prothallus with sex organs and young sporophyte (permanent slide).
11. ***Cycas***- Morphology (coralloid roots, bulbil, leaf), whole mount of microsporophyll, transverse section of coralloid root, transverse section of rachis, vertical section of leaflet, vertical section of microsporophyll, whole mount of spores (temporary slides), longitudinal section of ovule, transverse section of root (permanent slide).
12. ***Pinus***- Morphology (long and dwarf shoots, whole mount of dwarf shoot, male and female cones), transverse section of Needle, transverse section of stem, longitudinal section of / transverse section of male cone, whole mount of microsporophyll, whole mount of Microspores (temporary slides), longitudinal section of female cone, tangential longitudinal section & radial longitudinal sections stem (permanent slide).
13. ***Gnetum***- Morphology (stem, male & female cones), transverse section of stem, vertical section of ovule (permanent slide)
14. **Botanical excursion.**

#### Suggested Readings

1. Vashistha, P.C., Sinha, A.K., Kumar, A. (2010). Pteridophyta. S. Chand. Delhi, India.
2. Bhatnagar, S.P. & Moitra, A. (1996). Gymnosperms. New Age International (P) Ltd Publishers, New Delhi, India.
3. Parihar, N.S. (1991). An introduction to Embryophyta: Vol. I. Bryophyta. Central Book Depot. Allahabad.
4. Raven, P.H., Johnson, G.B., Losos, J.B., Singer, S.R. (2005). Biology. Tata McGraw Hill, Delhi.
5. Vanderpoorten, A. & Goffinet, B. (2009) Introduction to Bryophytes. Cambridge University Press.

**Morphology and Anatomy ( BTC 3.1)**  
**(Credits: Theory-4, Practical-2)**  
**THEORY**  
**Lectures: 60**

**Unit 1: Introduction, Structure and Development of Plant Body** **(10 Lectures)**

Applications in systematics, forensics and pharmacognosy.

Internal organization of plant body: The three tissue systems, types of cells and tissues.

Development of plant body: Polarity, Cytodifferentiation and organogenesis during embryonic development.

**Unit 2: Tissues** **(12 Lectures)**

Classification of tissues; Simple and complex tissues (no phylogeny); cytodifferentiation of tracheary elements and sieve elements; Pits and plasmodesmata; Wall ingrowths and transfer cells, adcrustation and incrustation, Ergastic substances. Hydathodes, cavities, lithocysts and laticifers.

**Unit 3: Apical meristems** **(15 Lectures)**

Evolution of concept of organization of shoot apex (Apical cell theory, Histogen theory, TunicaCorpus theory, continuing meristematic residue, cytohistological zonation); Types of vascular bundles; Structure of dicot and monocot stem. Origin, development, arrangement and diversity in size and shape of leaves; Structure of dicot and monocot leaf, Kranz anatomy. Organization of root apex (Apical cell theory, Histogen theory, Korper-Kappe theory); Quiescent centre; Rootcap; Structure of dicot and monocot root; Endodermis, exodermis and origin of lateral root.

**Unit 4: Vascular Cambium and Wood** **(15 Lectures)**

Structure, function and seasonal activity of cambium; Secondary growth in root and stem.

Axially and radially oriented elements; Types of rays and axial parenchyma; Cyclic aspects and reaction wood; Sapwood and heartwood; Ring and diffuse porous wood; Early and late wood, tyloses; Dendrochronology. Development and composition of periderm, rhytidome and lenticels.

**Unit 5: Adaptive and Protective Systems** **(8 Lectures)**

Epidermal tissue system, cuticle, epicuticular waxes, trichomes (uni- and multicellular, glandular and nonglandular, two examples of each), stomata (classification); Adcrustation and incrustation; Anatomical adaptations of xerophytes and hydrophytes.

**Practical**

1. Study of anatomical details through permanent slides/temporary stain mounts/ macerations/ museum specimens with the help of suitable examples.
2. Apical meristem of root, shoot and vascular cambium.
3. Distribution and types of parenchyma, collenchyma and sclerenchyma.
4. Xylem: Tracheary elements-tracheids, vessel elements; thickenings; perforation plates; xylem fibres.

5. Wood: ring porous; diffuse porous; tyloses; heart- and sapwood.
6. Phloem: Sieve tubes-sieve plates; companion cells; phloem fibres.
7. Epidermal system: cell types, stomata types; trichomes: non-glandular and glandular.
8. Root: monocot, dicot, secondary growth.
9. Stem: monocot, dicot - primary and secondary growth; periderm; lenticels.
10. Leaf: isobilateral, dorsiventral, C4 leaves (Kranz anatomy).
11. Adaptive Anatomy: xerophytes, hydrophytes.
12. Secretory tissues: cavities, lithocysts and laticifers.

### **Suggested Readings**

1. Dickison, W.C. (2000). Integrative Plant Anatomy. Harcourt Academic Press, USA.
2. Fahn, A. (1974). Plant Anatomy. Pergmon Press, USA.
3. Mauseth, J.D. (1988). Plant Anatomy. The Benjamin/Cummings Publisher, USA.
4. Evert, R.F. (2006) Esau's Plant Anatomy: Meristems, Cells, and Tissues of the Plant Body: Their Structure, Function and Development. John Wiley and Sons, Inc.

**Economic Botany ( BTC 3.2)**  
**(Credits: Theory-4, Practical-2)**  
**THEORY**  
**Lectures: 60**

**Unit 1: Origin of Cultivated Plants and agroecosystem (8 lectures)**

Concept of Centres of Origin, their importance with reference to Vavilov's work. Examples of major plant introductions; Crop domestication and loss of genetic diversity; evolution of new crops/varieties, importance of germplasm diversity. Agro-ecosystem: Jhum cultivation, terrace cultivation, water harvesting methods, irrigation methods and cropping system.

**Unit 2: Cereals, Legumes, Spices and Beverages (20 lectures)**

Wheat and Rice (origin, morphology, processing & uses); Brief account of millets. Origin, morphology and uses of Chick pea, Pigeon pea and fodder legumes. Importance to man and ecosystem. Listing of important spices, their family and part used. Economic importance with special reference to fennel, saffron, clove and black pepper Tea, Coffee (morphology, processing & uses)

**Unit 3: Sources of sugars and starches, Sources of oils and fats (14 lectures)**

Morphology and processing of sugarcane, products and by-products of sugarcane industry. Potato – morphology, propagation & uses. General description, classification, extraction, their uses and health implications groundnut, coconut, linseed, soybean, mustard and coconut (Botanical name, family & uses). Essential Oils: General account, extraction methods, comparison with fatty oils & their uses.

**Unit 4: Natural Rubber and fibres (7 lectures)**

Para-rubber: tapping, processing and uses. Classification based on the origin of fibers; Cotton, Coir and Jute (morphology, extraction and uses).

**Unit 5: Drug-yielding plants and Timber plants (11 lectures)**

Therapeutic and habit-forming drugs with special reference to *Cinchona*, *Digitalis*, *Papaver* and *Cannabis*; Tobacco (Morphology, processing, uses and health hazards). General account with special reference to teak and pine.

**Practical**

1. **Cereals:** Wheat (habit sketch, L. S/T.S. grain, starch grains, micro-chemical tests) Rice (habit sketch, study of paddy and grain, starch grains, micro-chemical tests).
2. **Legumes:** Soybean, Groundnut, (habit, fruit, seed structure, micro-chemical tests).
3. **Sources of sugars and starches:** Sugarcane ( habit sketch; cane juice- micro-chemical tests), Potato (habit sketch, tuber morphology, T.S. tuber to show localization of starch grains, w.m. starch grains, micro-chemical tests).
4. **Spices:** Black pepper, Fennel and Clove (habit and sections).
5. **Beverages:** Tea (plant specimen, tea leaves), Coffee (plant specimen, beans).
6. **Sources of oils and fats:** Coconut- T.S. nut, Mustard–plant specimen, seeds; tests for fats in crushed seeds.

7. **Essential oil-yielding plants:** Habit sketch of *Rosa*, *Vetiveria*, *Santalum* and *Eucalyptus* (specimens/photographs).
8. **Rubber:** specimen, photograph/model of tapping, samples of rubber products.
9. **Drug-yielding plants:** Specimens of *Digitalis*, *Papaver* and *Cannabis*.
10. **Tobacco:** specimen and products of Tobacco.
11. **Woods:** *Tectona*, *Pinus*: Specimen, Section of young stem.
12. **Fiber-yielding plants:** Cotton (specimen, whole mount of seed to show lint and fuzz; whole mount of fiber and test for cellulose), Jute (specimen, transverse section of stem, test for lignin on transverse section of stem and fiber).

### Suggested Readings

1. Kochhar, S.L. (2012). Economic Botany in Tropics, MacMillan & Co. New Delhi, India.
2. Wickens, G.E. (2001). Economic Botany: Principles & Practices. Kluwer Academic Publishers, The Netherlands.
3. Chrispeels, M.J. and Sadava, D.E. 1994 Plants, Genes and Agriculture. Jones & Bartlett Publishers.

**Genetics (BTC 3.3)**  
**(Credits: Theory-4, Practical-2)**  
**THEORY**  
**Lectures: 60**

**Unit 1: Mendelian genetics and its extension**

**(16 lectures)**

Mendelism: History; Principles of inheritance; Chromosome theory of inheritance; Autosomes and sex chromosomes; Probability and pedigree analysis; Incomplete dominance and codominance; Multiple alleles, Lethal alleles, Epistasis, Pleiotropy, Recessive and Dominant traits, Penetrance and Expressivity, Numericals; Polygenic inheritance.

**Unit 2: Extrachromosomal Inheritance**

**(6 lectures)**

Chloroplast mutation: Variegation in Four o'clock plant; Mitochondrial mutations in yeast; Maternal effects-shell coiling in snail; Infective heredity- Kappa particles in *Paramecium*.

**Unit 3: Linkage, crossing over and chromosome mapping (12 lectures)**

Linkage and crossing over-Cytological basis of crossing over; Recombination frequency, two factor and three factor crosses; Interference and coincidence; Numericals based on gene mapping; Sex Linkage.

**Unit 4: Fine structure of gene, Variation in chromosome number and structure; Gene mutations (20 lectures)**

Classical vs molecular concepts of gene; Cis-Trans complementation test for functional allelism; Structure of Phage T4, rII Locus.

Deletion, Duplication, Inversion, Translocation, Position effect, Euploidy and Aneuploidy Types of mutations; Molecular basis of Mutations; Mutagens – physical and chemical (Base analogs, deaminating, alkylating and intercalating agents); Detection of mutations: ClB method. Role of Transposons in mutation. DNA repair mechanisms.

**Unit 5. Population and Evolutionary Genetics**

**(6 lectures)**

Allele frequencies, Genotype frequencies, Hardy-Weinberg Law, role of natural selection, mutation, genetic drift. Genetic variation and Speciation.

**Practical**

1. Meiosis through temporary squash preparation.
2. Mendel's laws through seed ratios. Laboratory exercises in probability and chi-square.
3. Chromosome mapping using point test cross data.
4. Pedigree analysis for dominant and recessive autosomal and sex linked traits.
5. Incomplete dominance and gene interaction through seed ratios (9:7, 9:6:1, 13:3, 15:1, 12:3:1, 9:3:4).
6. Blood Typing: ABO groups & Rh factor.
7. Study of aneuploidy: Down's, Klinefelter's and Turner's syndromes.
8. Photographs/Permanent Slides showing Translocation Ring, Laggards and Inversion Bridge.
9. Study of human genetic traits: Sickle cell anemia, Xeroderma Pigmentosum, Albinism, red-green Colour blindness, Widow's peak, Rolling of tongue, Hitchhiker's thumb and Attached ear lobe.

**Suggested Readings**

1. Gardner, E.J., Simmons, M.J., Snustad, D.P. (1991). Principles of Genetics, John Wiley & sons, India. 8<sup>th</sup> edition.
2. Snustad, D.P. and Simmons, M.J. (2010). Principles of Genetics, John Wiley & Sons Inc., India. 5<sup>th</sup> edition.
3. Klug, W.S., Cummings, M.R., Spencer, C.A. (2009). Concepts of Genetics. Benjamin Cummings, U.S.A. 9<sup>th</sup> edition.
4. Griffiths, A.J.F., Wessler, S.R., Carroll, S.B., Doebley, J. (2010). Introduction to Genetic Analysis. W. H. Freeman and Co., U.S.A. 10<sup>th</sup> edition.

## **Molecular Biology (BTC 4.1)**

### **THEORY (Credit :4)**

**Lectures: 60**

#### **Unit 1: Nucleic acids : Carriers of genetic information; The Structures of DNA and RNA / Genetic Material; Central dogma and genetic code (16 lectures)**

Historical perspective; DNA as the carrier of genetic information (Griffith's, Hershey & Chase, Avery, McLeod & McCarty, Fraenkel-Conrat's experiment.

DNA Structure: Miescher to Watson and Crick- historic perspective, DNA structure, Salient features of double helix, Types of DNA, Types of genetic material, denaturation and renaturation, cot curves; Organization of DNA- Prokaryotes, Viruses, Eukaryotes. RNA

Structure\_Organelle DNA -- mitochondria and chloroplast DNA. The Nucleosome\_Chromatin structure- Euchromatin, Heterochromatin- Constitutive and Facultative heterochromatin.

Key experiments establishing- The Central Dogma (Adaptor hypothesis and discovery of mRNA template), Genetic code (deciphering & salient features)

#### **Unit 2: The replication of DNA (10 lectures)**

Chemistry of DNA synthesis (Kornberg's discovery); General principles – bidirectional, semiconservative and semi discontinuous replication, RNA priming; Various models of DNA

replication, including rolling circle,  $\theta$  (theta) mode of replication, replication of linear ds-DNA, replication of the 5' end of linear chromosome; Enzymes involved in DNA replication.

#### **Unit 3: Transcription (18 lectures)**

Transcription in prokaryotes and eukaryotes. Principles of transcriptional regulation;

Prokaryotes: Regulation of lactose metabolism and tryptophan synthesis in *E. coli*. Eukaryotes: transcription factors, heat shock proteins, steroids and peptide hormones; Gene silencing.

#### **Unit 4: Processing and modification of RNA (8 lectures)**

Split genes-concept of introns and exons, removal of introns, spliceosome machinery, splicing pathways, group I and group II intron splicing, alternative splicing eukaryotic mRNA processing (5' cap, 3' polyA tail); Ribozymes; RNA editing and mRNA transport.

#### **Unit 5: Translation (8 lectures)**

Ribosome structure and assembly, mRNA; Charging of tRNA, aminoacyl-tRNA synthetases; Various steps in protein synthesis, proteins involved in initiation, elongation and termination of polypeptides; Fidelity of translation; Inhibitors of protein synthesis; Post-translational modifications of proteins.

### **Practical**

1. Preparation of LB medium and raising *E. Coli*.
2. Isolation of genomic DNA from *E. Coli*.



3. DNA isolation from cauliflower head.
4. DNA estimation by diphenylamine reagent/UV Spectrophotometry.
5. Study of DNA replication mechanisms through photographs (Rolling circle, Theta replication and semi-discontinuous replication).
6. Study of structures of prokaryotic RNA polymerase and eukaryotic RNA polymerase II through photographs.
7. Photographs establishing nucleic acid as genetic material (Messelson and Stahl's, Avery et al, Griffith's, Hershey & Chase's and Fraenkel&Conrat's experiments)
8. Study of the following through photographs: Assembly of Spliceosome machinery; Splicing mechanism in group I & group II introns; Ribozyme and Alternative splicing.

### **Suggested Readings**

1. Watson J.D., Baker, T.A., Bell, S.P., Gann, A., Levine, M., Losick, R. (2007). Molecular Biology of the Gene, Pearson Benjamin Cummings, CSHL Press, New York, U.S.A. 6th edition.
2. Snustad, D.P. and Simmons, M.J. (2010). Principles of Genetics. John Wiley and Sons Inc., U.S.A. 5th edition.
3. Klug, W.S., Cummings, M.R., Spencer, C.A. (2009). Concepts of Genetics. Benjamin Cummings. U.S.A. 9th edition.
4. Russell, P. J. (2010). i-Genetics- A Molecular Approach. Benjamin Cummings, U.S.A. 3rd edition.
5. Griffiths, A.J.F., Wessler, S.R., Carroll, S.B., Doebley, J. (2010). Introduction to Genetic Analysis. W. H. Freeman and Co., U.S.A. 10th edition.

## **Plant Ecology and Phytogeography (BTC 4.2)**

**(Credits: Theory-4, Practical-2)**

### **THEORY**

**Lectures: 60**

#### **Unit 1: Introduction; Soil and Water**

**(16 lectures)**

Basic concepts; Levels of organization. Inter-relationships between the living world and the environment, the components and dynamism, homeostasis.

Importance; Origin; Formation; Composition; Physical; Chemical and Biological components; Soil profile; Role of climate in soil development.

Importance: States of water in the environment; Atmospheric moisture; Precipitation types (rain, fog, snow, hail, dew); Hydrological Cycle; Water in soil; Water table.

#### **Unit 2: Abiotic factors -Light, temperature, wind and fire; Biotic interactions**

**(8 lectures)**

Variations; adaptations of plants to their variation. Trophic organization, basic source of energy, autotrophy, heterotrophy; symbiosis, commensalism, parasitism; food chains and webs; ecological pyramids; biomass, standing crop.

#### **Unit 3: Population ecology and Plant communities**

**(12 lectures)**

Characteristics and Dynamics .Ecological Speciation Concept of ecological amplitude; Habitat and niche; Characters: analytical and synthetic; Ecotone and edge effect; Dynamics: succession – processes, types; climax concepts.

#### **Unit 4: Ecosystems and Functional aspects of ecosystem**

**(12 lectures)**

Structure; Processes; Trophic organisation; Food chains and Food webs; Ecological pyramids. Principles and models of energy flow; Production and productivity; Ecological efficiencies; Biogeochemical cycles; Cycling of Carbon, Nitrogen and Phosphorus.

#### **Unit 5: Phytogeography**

**(12 lectures)**

Principles; Continental drift; Theory of tolerance; Endemism; Brief description of major terrestrial biomes (one each from tropical, temperate & tundra); Phytogeographical division of India; Local Vegetation.

#### **Practical**

1. Study of instruments used to measure microclimatic variables: Soil thermometer, maximum and minimum thermometer, anemometer, psychrometer/hygrometer, rain gauge and lux meter.
2. Determination of pH of various soil and water samples (pH meter, universal indicator/Lovibond comparator and pH paper)
3. Analysis for carbonates, chlorides, nitrates, sulphates, organic matter and base deficiency from two soil samples by rapid field tests.
4. Determination of organic matter of different soil samples by Walkley & Black rapid titration method.
5. Comparison of bulk density, porosity and rate of infiltration of water in soils of three habitats.
6. Determination of dissolved oxygen of water samples from polluted and unpolluted sources.
7. (a). Study of morphological adaptations of hydrophytes and xerophytes (four each).  
(b). Study of biotic interactions of the following: Stem parasite (*Cuscuta*), Root parasite (*Orobanch*) Epiphytes, Predation (Insectivorous plants).

8. Determination of minimal quadrat size for the study of herbaceous vegetation in the college campus, by species area curve method (species to be listed).
9. Quantitative analysis of herbaceous vegetation in the college campus for frequency and comparison with Raunkiaer's frequency distribution law.
10. Quantitative analysis of herbaceous vegetation for density and abundance in the college campus.
11. Field visit to familiarise students with ecology of different sites.

### **Suggested Readings**

1. Odum, E.P. (2005). Fundamentals of ecology. Cengage Learning India Pvt. Ltd., New Delhi. 5th edition.
2. Singh, J.S., Singh, S.P., Gupta, S. (2006). Ecology Environment and Resource Conservation. Anamaya Publications, New Delhi, India.
3. Sharma, P.D. (2010). Ecology and Environment. Rastogi Publications, Meerut, India. 8th edition.
4. Wilkinson, D.M. (2007). Fundamental Processes in Ecology: An Earth Systems Approach. Oxford University Press. U.S.A.
5. Kormondy, E.J. (1996). Concepts of ecology. PHI Learning Pvt. Ltd., Delhi, India. 4th edition.

**Plant Systematics (BTC 4.3)**  
**(Credits: Theory-4, Practical-2)**  
**THEORY**  
**Lectures: 60**

**Unit 1: Significance of Plant systematics (12 lectures)**

Introduction to systematics; Plant identification, Classification, Nomenclature. Evidences from palynology, cytology, phytochemistry and molecular data. Field inventory; Functions of Herbarium; Important herbaria and botanical gardens of the world and India; Virtual herbarium; E-flora; Documentation: Flora, Monographs, Journals; Keys: Single access and Multi-access.

**Unit 2: Taxonomic hierarchy and Botanical nomenclature (16 lectures)**

Concept of taxa (family, genus, species); Categories and taxonomic hierarchy; Species concept (taxonomic, biological, evolutionary). Principles and rules (ICN); Ranks and names; Typification, author citation, valid publication, rejection of names, principle of priority and its limitations; Names of hybrids.

**Unit 3: Systems of classification (12 lectures)**

Major contributions of Theophrastus, Bauhin, Tournefort, Linnaeus, Adanson, de Candolle, Bessey, Hutchinson, Takhtajan and Cronquist; Classification systems of Bentham and Hooker (upto series) and Engler and Prantl (upto series); Brief reference of Angiosperm Phylogeny Group (APG III) classification.

**Unit 4: Biometrics, numerical taxonomy and cladistics (10 lectures)**

Characters; Variations; OTUs, character weighting and coding; Cluster analysis; Phenograms, cladograms (definitions and differences).

**Unit 5: Phylogeny of Angiosperms (12 lectures)**

Terms and concepts (primitive and advanced, homology and analogy, parallelism and convergence, monophyly, Paraphyly, polyphyly and clades). Origin and evolution of angiosperms; Co-evolution of angiosperms and animals; Methods of illustrating evolutionary relationship (phylogenetic tree, cladogram).

**Practical**

1. Study of vegetative and floral characters of the following families (Description, V.S. flower, section of ovary, floral diagram/s, floral formula/e and systematic position according to Bentham & Hooker's system of classification):  
Ranunculaceae - *Ranunculus*, *Delphinium*  
Brassicaceae - *Brassica*, *Alyssum* / *Iberis*  
Myrtaceae - *Eucalyptus*, *Callistemon*  
Umbelliferae - *Coriandrum* / *Anethum* / *Foeniculum*  
Asteraceae - *Sonchus* / *Launaea*, *Vernonia* / *Ageratum*, *Eclipta* / *Tridax*  
Solanaceae - *Solanum nigrum* / *Withania*  
Lamiaceae - *Salvia* / *Ocimum*  
Euphorbiaceae - *Euphorbia hirta* / *E. milii*, *Jatropha*  
Liliaceae - *Asphodelus* / *Lilium* / *Allium*  
Poaceae - *Triticum* / *Hordeum* / *Avena*
2. Field visit (local) – Subject to grant of funds from the university.
3. Mounting of a properly dried and pressed specimen of any wild plant with herbarium label (to be submitted in the record book).

**Suggested Readings**

1. Singh, (2012). *Plant Systematics: Theory and Practice* Oxford & IBH Pvt. Ltd., New Delhi. 3<sup>rd</sup> edition.
2. Jeffrey, C. (1982). *An Introduction to Plant Taxonomy*. Cambridge University Press, Cambridge.
3. Judd, W.S., Campbell, C.S., Kellogg, E.A., Stevens, P.F. (2002). *Plant Systematics-A Phylogenetic Approach*. Sinauer Associates Inc., U.S.A. 2<sup>nd</sup> edition.
4. Maheshwari, J.K. (1963). *Flora of Delhi*. CSIR, New Delhi.
5. Radford, A.E. (1986). *Fundamentals of Plant Systematics*. Harper and Row, New York.

# Reproductive Biology of Angiosperms (BTC 5.1)

(Credits: Theory-4, Practical-2)

## THEORY

Lectures: 60

### Unit 1: Introduction to Angiosperms; Reproductive development (10 lectures)

History (contributions of G.B. Amici, W. Hofmeister, E. Strasburger, S.G. Nawaschin, P. Maheshwari, B.M. Johri, W.A. Jensen, J. Heslop-Harrison) and scope.

Induction of flowering; flower as a modified determinate shoot. Flower development: genetic and molecular aspects.

### Unit 2: Anther and pollen biology (10 lectures)

Anther wall: Structure and functions, microsporogenesis, callose deposition and its significance. Microgametogenesis; Pollen wall structure, MGU (male germ unit) structure, NPC system; Palynology and scope (a brief account); Pollen wall proteins; Pollen viability, storage and germination; Abnormal features: Pseudomonads, polyads, massulae, pollinia.

### Unit 3: Ovule (10 lectures)

Structure; Types; Special structures—endothelium, obturator, aril, caruncle and hypostase; Female gametophyte—megasporeogenesis (monosporic, bisporic and tetrasporic) and megagametogenesis (details of *Polygonum* type); Organization and ultrastructure of mature embryo sac.

### Unit 4: Pollination and fertilization, Self incompatibility (16 lectures)

Pollination types and significance; adaptations; structure of stigma and style; path of pollen tube in pistil; double fertilization. Basic concepts (interspecific, intraspecific, homomorphic, heteromorphic, GSI and SSI); Methods to overcome self-incompatibility: mixed pollination, bud pollination, stub pollination; Intra-ovarian and *in vitro* pollination; Modification of stigma surface, parasexual hybridization; Cybrids, *in vitro* fertilization.

### Unit 5: Embryo, Endosperm and Seed; Polyembryony and apomixis (16 lectures)

Structure and types; General pattern of development of dicot and monocot embryo and endosperm; Suspensor: structure and functions; Embryo-endosperm relationship; Nutrition of embryo; Unusual features; Embryo development in *Paeonia*. Seed structure, importance and dispersal mechanisms Introduction; Classification; Causes and applications.

## Practical

1. Anther: Wall and its ontogeny; Tapetum (amoeboid and glandular); MMC, spore tetrads, uninucleate, bicelled and dehiscent anther stages through slides/micrographs, male germ unit (MGU) through photographs and schematic representation.
3. Pollen grains: Fresh and acetolyzed showing ornamentation and aperture, pseudomonads, polyads, pollinia (slides/photographs, fresh material), ultrastructure of pollen wall (micrograph); Pollen viability: Tetrazolium test. germination: Calculation of percentage germination in different media using hanging drop method.

4. Ovule: Types-anatropous, orthotropous, amphitropous/campylotropous, circinotropous, unitegmic, bitegmic; Tenuinucellate and crassinucellate; Special structures: Endothelium, obturator, hypostase, caruncle and aril (permanent slides/specimens/photographs).
5. Female gametophyte through permanent slides/ photographs: Types, ultrastructure of mature egg apparatus.
6. Intra-ovarian pollination; Test tube pollination through photographs.
7. Endosperm: Dissections of developing seeds for endosperm with free-nuclear haustoria.
8. Embryogenesis: Study of development of dicot embryo through permanent slides; dissection of developing seeds for embryos at various developmental stages; Study of suspensor through electron micrographs.

### **Suggested Readings**

1. Bhojwani, S.S. and Bhatnagar, S.P. (2011). The Embryology of Angiosperms, Vikas Publishing House. Delhi. 5<sup>th</sup> edition.
2. Shivanna, K.R. (2003). Pollen Biology and Biotechnology. Oxford and IBH Publishing Co. Pvt. Ltd. Delhi.
3. Raghavan, V. (2000). Developmental Biology of Flowering plants, Springer, Netherlands.
4. Johri, B.M. I (1984). Embryology of Angiosperms, Springer-Verlag, Netherlands.

**Plant Physiology (BTC 5.2)**  
**(Credits: Theory-4, Practical-2)**  
**THEORY**  
**Lectures: 60**

**Unit 1: Plant-water relations**

**(10 lectures)**

Water Potential and its components, water absorption by roots, aquaporins, pathway of water movement, symplast, apoplast, transmembrane pathways, root pressure, guttation. Ascent of sap– cohesion-tension theory. Transpiration and factors affecting transpiration, antitranspirants, mechanism of stomatal movement.

**Unit 2: Mineral nutrition**

**(8 lectures)**

Essential and beneficial elements, macro and micronutrients, methods of study and use of nutrient solutions, criteria for essentiality, mineral deficiency symptoms, roles of essential elements, chelating agents.

**Unit 3: Nutrient Uptake Translocation in the phloem**

**(16 lectures)**

Soil as a nutrient reservoir, transport of ions across cell membrane, passive absorption, electrochemical gradient, facilitated diffusion, active absorption, role of ATP, carrier systems, proton ATPase pump and ion flux, uniport, co-transport, symport, antiport. Experimental evidence in support of phloem as the site of sugar translocation. Pressure–Flow Model; Phloem loading and unloading; Source–sink relationship.

**Unit 4: Plant growth regulators**

**(14 lectures)**

Discovery, chemical nature (basic structure), bioassay and physiological roles of Auxin, Gibberellins, Cytokinin, Abscisic acid, Ethylene, Brassinosteroids and Jasmonic acid.

**Unit 5: Physiology of flowering; Phytochrome, cryptochromes and phototropins (12 lectures)**

Photoperiodism, flowering stimulus, florigen concept, vernalization, seed dormancy. Discovery, chemical nature, role in photomorphogenesis, low energy responses (LER) and high irradiance responses (HIR), mode of action.

**Practical**

1. Determination of osmotic potential of plant cell sap by plasmolytic method.
2. Determination of water potential of given tissue (potato tuber) by weight method.
3. Study of the effect of wind velocity and light on the rate of transpiration in excised twig/leaf.
4. Calculation of stomatal index and stomatal frequency from the two surfaces of leaves of a mesophyte and xerophyte.
5. To calculate the area of an open stoma and percentage of leaf area open through stomata in a mesophyte and xerophyte (both surfaces).
6. To study the phenomenon of seed germination (effect of light).
7. To study the effect of different concentrations of IAA on *Avena* coleoptile elongation (IAA Bioassay).
8. To study the induction of amylase activity in germinating barley grains.

**Demonstration experiments**

1. To demonstrate suction due to transpiration.
2. Fruit ripening/Rooting from cuttings (Demonstration).
3. Bolting experiment/*Avena* coleoptile bioassay (demonstration).

**Suggested Readings**

1. Hopkins, W.G. and Huner, A. (2008). Introduction to Plant Physiology. John Wiley and Sons. U.S.A. 4<sup>th</sup> edition.
2. Taiz, L., Zeiger, E., Møller, I.M. and Murphy, A (2015). Plant Physiology and Development. Sinauer Associates Inc. USA. 6<sup>th</sup> edition.
3. Bajracharya D. (1999). Experiments in Plant Physiology-A Laboratory Manual. Narosa Publishing House, New Delhi.

**Plant Metabolism (BTC 6.1)**  
**(Credits: Theory-4, Practical-2)**  
**THEORY**  
**Lectures: 60**

**Unit 1: Concept of metabolism (6 lectures)**

Introduction, anabolic and catabolic pathways, regulation of metabolism, role of regulatory enzymes (allosteric, covalent modulation and Isozymes).

**Unit 2: Carbon assimilation (14 lectures)**

Historical background, photosynthetic pigments, role of photosynthetic pigments (chlorophylls and accessory pigments), antenna molecules and reaction centres, photochemical reactions, photosynthetic electron transport, PSI, PSII, Q cycle, CO<sub>2</sub> reduction, photorespiration, C<sub>4</sub> pathways; Crassulacean acid metabolism; Factors affecting CO<sub>2</sub> reduction.

**Unit 3: Carbohydrate metabolism; Carbon Oxidation (12 lectures)**

Synthesis and catabolism of sucrose and starch. Glycolysis, fate of pyruvate, regulation of glycolysis, oxidative pentose phosphate pathway, oxidative decarboxylation of pyruvate, regulation of PDH, NADH shuttle; TCA cycle, amphibolic role, anaplerotic reactions, regulation of the cycle, mitochondrial electron transport, oxidative phosphorylation, cyanide-resistant respiration, factors affecting respiration.

**Unit 4: Lipid and Nitrogen metabolism (16 lectures)**

Synthesis and breakdown of triglycerides,  $\beta$ -oxidation, glyoxylate cycle, gluconeogenesis and its role in mobilisation of lipids during seed germination,  $\alpha$  oxidation. Nitrate assimilation, biological nitrogen fixation (examples of legumes and non-legumes); Physiology and biochemistry of nitrogen fixation; Ammonia assimilation and transamination.

**Unit 5: ATP-Synthesis and Mechanism of signal transduction (12 lectures)**

Mechanism of ATP synthesis, substrate level phosphorylation, chemiosmotic mechanism (oxidative and photophosphorylation), ATP synthase, Boyers conformational model, Racker's experiment, Jagendorf's experiment; role of uncouplers. Receptor-ligand interactions; Second messenger concept, Calcium calmodulin, MAP kinase cascade

**Practical**

1. Chemical separation of photosynthetic pigments.
2. Experimental demonstration of Hill's reaction.
3. To study the effect of light intensity on the rate of photosynthesis.
4. Effect of carbon dioxide on the rate of photosynthesis.
5. To compare the rate of respiration in different parts of a plant.
6. To demonstrate activity of Nitrate reductase in germinating leaves of different plant sources.
7. To study the activity of lipases in germinating oilseeds and demonstrate mobilization of lipids during germination.
8. Demonstration of fluorescence by isolated chlorophyll pigments.
9. Demonstration of absorption spectrum of photosynthetic pigments.

**Suggested Readings**

1. Hopkins, W.G. and Huner, A. (2008). Introduction to Plant Physiology. John Wiley and Sons. U.S.A. 4th edition.
2. Taiz, L., Zeiger, E., Møller, I.M. and Murphy, A (2015). Plant Physiology and Development. Sinauer Associates Inc. USA. 6th edition.
3. Harborne, J.B. (1973). Phytochemical Methods. John Wiley & Sons. New York.



**Plant Biotechnology (BTC 6.2)**  
**(Credits: Theory-4, Practical-2)**  
**THEORY**  
**Lectures: 60**

**Unit 1: Plant Tissue Culture** **(16 lectures)**

Historical perspective; Composition of media; Nutrient and hormone requirements (role of vitamins and hormones); Totipotency; Organogenesis; Embryogenesis (somatic and zygotic); Protoplast isolation, culture and fusion; Tissue culture applications (micropropagation, androgenesis, virus elimination, secondary metabolite production, haploids, triploids and hybrids; Cryopreservation; Germplasm Conservation).

**Unit 2: Recombinant DNA technology** **(12 lectures)**

Restriction Endonucleases (History, Types I-IV, biological role and application); Restriction Mapping (Linear and Circular); Cloning Vectors: Prokaryotic (pUC 18 and pUC19, pBR322, Ti plasmid, BAC); Lambda phage, M13 phagemid, Cosmid, Shuttle vector; Eukaryotic Vectors (YAC).

**Unit 3: Gene Cloning** **(10 lectures)**

Recombinant DNA, Bacterial Transformation and selection of recombinant clones, PCR mediated gene cloning; Gene Construct; construction of genomic and cDNA libraries, screening DNA libraries to obtain gene of interest by genetic selection; complementation, colony hybridization; PCR

**Unit 4: Methods of gene transfer** **(8 lectures)**

*Agrobacterium*-mediated, Direct gene transfer by Electroporation, Microinjection, Microprojectile bombardment; Selection of transgenics—selectable marker and reporter genes (Luciferase, GUS, GFP).

**Unit 5: Applications of Biotechnology** **(14 lectures)**

Pest resistant (Bt-cotton); herbicide resistant plants (RoundUp Ready soybean); Transgenic crops with improved quality traits (FlavrSavr tomato, Golden rice); Improved horticultural varieties (Moon dust carnations); Role of transgenics in bioremediation (Superbug); edible vaccines; Industrial enzymes (Aspergillase, Protease, Lipase); Genetically Engineered Products—Human Growth Hormone; Humulin; Biosafety concerns.

**Practical**

1. (a) Preparation of MS medium.  
(b) Demonstration of *in vitro* sterilization and inoculation methods using leaf and nodal explants of tobacco, *Datura*, *Brassica* etc.
2. Study of anther, embryo and endosperm culture, micropropagation, somatic embryogenesis & artificial seeds through photographs.

3. Isolation of protoplasts.
4. Construction of restriction map of circular and linear DNA from the data provided.
5. Study of methods of gene transfer through photographs: *Agrobacterium*-mediated, direct gene transfer by electroporation, microinjection, microprojectile bombardment.
6. Study of steps of genetic engineering for production of Bt cotton, Golden rice, FlavrSavr tomato through photographs.
7. Isolation of plasmid DNA.
8. Restriction digestion and gel electrophoresis of plasmid DNA.

### **Suggested Readings**

1. Bhojwani, S.S. and Razdan, M.K., (1996). Plant Tissue Culture: Theory and Practice. Elsevier Science Amsterdam. The Netherlands.
2. Glick, B.R., Pasternak, J.J. (2003). Molecular Biotechnology- Principles and Applications of recombinant DNA. ASM Press, Washington.
3. Bhojwani, S.S. and Bhatnagar, S.P. (2011). The Embryology of Angiosperms. Vikas Publication House Pvt. Ltd., New Delhi. 5<sup>th</sup> edition.
4. Snustad, D.P. and Simmons, M.J. (2010). Principles of Genetics. John Wiley and Sons, U.K. 5<sup>th</sup> edition.
5. Stewart, C.N. Jr. (2008). Plant Biotechnology & Genetics: Principles, Techniques and Applications. John Wiley & Sons Inc. U.S.A.

## Discipline Specific Elective

### Plant Breeding (BTD 5.3) (Credits: Theory-4, Practical-2) THEORY Lectures: 60

#### **Unit 1: Plant Breeding** (10 lectures)

Introduction and objectives. Breeding systems: modes of reproduction in crop plants. Important achievements and undesirable consequences of plant breeding.

#### **Unit 2: Methods of crop improvement** (20 lectures)

Introduction: Centres of origin and domestication of crop plants, plant genetic resources; Acclimatization; Selection methods: For self pollinated, cross pollinated and vegetatively propagated plants; Hybridization: For self, cross and vegetatively propagated plants – Procedure, advantages and limitations.

#### **Unit 3: Quantitative inheritance** (10 lectures)

Concept, mechanism, examples of inheritance of Kernel colour in wheat, kernel colour in corn., Monogenic vs polygenic Inheritance.

#### **Unit 4: Inbreeding depression and heterosis** (10 lectures)

History, genetic basis of inbreeding depression and heterosis; Applications.

#### **Unit 5: Crop improvement and breeding** (10 lectures)

Role of mutations; Polyploidy; Distant hybridization and role of biotechnology in crop improvement.

#### **Suggested Readings**

1. Singh, B.D. (2005). Plant Breeding: Principles and Methods. Kalyani Publishers. 7<sup>th</sup> edition.
2. Chaudhari, H.K. (1984). Elementary Principles of Plant Breeding. Oxford – IBH. 2<sup>nd</sup> edition.
3. Acquaah, G. (2007). Principles of Plant Genetics & Breeding. Blackwell Publishing.

**Natural Resource Management (BTD 5.4)**  
**(Credits: Theory-4, Practical-2)**  
**THEORY**  
**Lectures: 60**

**Unit 1: Natural resources and Sustainable utilization (10 lectures)**

Definition and types.

Concept, approaches (economic, ecological and socio-cultural) with special reference to sustainable practises in Nagaland.

**Unit 2: Land and Water (16 lectures)**

Utilization (agricultural, pastoral, horticultural, silvicultural); Soil degradation and management. Fresh water (rivers, lakes, groundwater, aquifers, watershed); Marine; Estuarine; Wetlands; Threats and management strategies.

**Unit 3: Biological Resources (12 lectures)**

Biodiversity-definition and types; Significance; Threats; Management strategies; Bioprospecting; IPR; CBD; National Biodiversity Action Plan).

**Unit 4: Forests and Energy (12 lectures)**

Definition, Cover and its significance (with special reference to India); Major and minor Forest products; Depletion; Management. Renewable and non-renewable sources of energy

**Unit 5: Contemporary practices in resource management and National and international efforts in resource management and conservation (10 lectures)**

EIA, GIS, Participatory Resource Appraisal, Ecological Footprint with emphasis on carbon footprint, Resource Accounting; Waste management.

**Practical**

1. Estimation of solid waste generated by a domestic system (biodegradable and nonbiodegradable) and its impact on land degradation.
2. Collection of data on forest cover of specific area.
3. Measurement of dominance of woody species by DBH (diameter at breast height) method.
4. Calculation and analysis of ecological footprint.
5. Ecological modeling.
6. Field report.

**Suggested Readings**

1. Vasudevan, N. (2006). Essentials of Environmental Science. Narosa Publishing House, New Delhi.
2. Singh, J. S., Singh, S.P. and Gupta, S. (2006). Ecology, Environment and Resource Conservation. Anamaya Publications, New Delhi.
3. Rogers, P.P., Jalal, K.F. and Boyd, J.A. (2008). An Introduction to Sustainable Development. Prentice Hall of India Private Limited, New Delhi.

# Horticultural Practices and Post-Harvest Technology (BTD 6.3)

(Credits: Theory-4, Practical-2)

## THEORY

Lectures: 60

### Unit 1: Introduction and horticultural techniques (15 lectures)

Scope and importance, Branches of horticulture; Role in rural economy and employment generation; Importance in food and nutritional security; Urban horticulture and ecotourism. Application of manure, fertilizers, nutrients and PGRs; Weed control; Biofertilizers, biopesticides; Irrigation methods (drip irrigation, surface irrigation, furrow and border irrigation); Hydroponics; Propagation Methods: asexual (grafting, cutting, layering, budding), sexual (seed propagation), Scope and limitations.

### Unit 2: Floriculture and Ornamental plants (15 lectures)

Cut flowers, bonsai, commerce (market demand and supply); Importance of flower shows and exhibitions Types, classification (annuals, perennials, climbers and trees); Identification and salient features of some ornamental plants [rose, marigold, gladiolus, carnations, orchids, poppies, gerberas, tuberose, sages, cacti and succulents (opuntia, agave and spurges)] Ornamental flowering trees (Indian laburnum, gulmohar, Jacaranda, Lagerstroemia, fishtail and areca palms, semul, coral tree).

### Unit 3: Fruit and vegetable crops (12 lectures)

Production, origin and distribution; Description of plants and their economic products; Management and marketing of vegetable and fruit crops; Identification of some fruits and vegetable varieties (citrus, banana, mango, chillies and cucurbits).

### Unit 4: Post-harvest technology (12 lectures)

Importance of post harvest technology in horticultural crops; Evaluation of quality traits; Harvesting and handling of fruits, vegetables and cut flowers; Principles, methods of preservation and processing; Methods of minimizing losses during storage and transportation; Food irradiation - advantages and disadvantages; food safety.

### Unit 5: Landscaping and garden design (6 lectures)

Planning and layout (parks and avenues); gardening traditions - Ancient Indian, European, Mughal and Japanese Gardens; Urban forestry; policies and practices.

## Practical

### Field trip

Field visits to gardens, standing crop sites, nurseries, vegetable gardens and horticultural fields at IARI or other suitable locations.

## Suggested Readings

1. Singh, D. & Manivannan, S. (2009). Genetic Resources of Horticultural Crops. Ridhi International, Delhi, India.
2. Swaminathan, M.S. and Kochhar, S.L. (2007). Groves of Beauty and Plenty: An Atlas of Major Flowering Trees in India. Macmillan Publishers, India.
3. NIIR Board (2005). Cultivation of Fruits, Vegetables and Floriculture. National Institute of Industrial Research Board, Delhi.
4. Kader, A.A. (2002). Post-Harvest Technology of Horticultural Crops. UCANR Publications, USA. 56
5. Capon, B. (2010). Botany for Gardeners. 3rd Edition. Timber Press, Portland, Oregon.

**Biostatistics (BTD 6.4)**  
**(Credits: Theory-4, Practical-2)**  
**THEORY**  
**Lectures: 60**

**Unit 1: Biostatistics**

**(12 lectures)**

Definition - statistical methods - basic principles. Variables - measurements, functions, limitations and uses of statistics.

**Unit 2: Collection of data primary and secondary**

**(12 lectures)**

Types and methods of data collection procedures - merits and demerits. Classification - tabulation and presentation of data - sampling methods.

**Unit 3: Measures of central tendency**

**(14 lectures)**

Mean, median, mode, geometric mean - merits & demerits. Measures of dispersion - range, standard deviation, mean deviation, quartile deviation - merits and demerits; Co-efficient of variations.

**Unit 4: Correlation**

**(12 lectures)**

Types and methods of correlation, probability (addition rule, multiplication rule) regression, simple regression equation, fitting prediction, UNIT similarities and dissimilarities of correlation and regression

**Unit 5: Statistical inference**

**(10 lectures)**

Hypothesis - simple hypothesis - student 't' test - chi square test.

**Practical**

- 1) Calculation of mean, standard deviation and standard error
- 2) Calculation of correlation coefficient values and finding out the probability
- 3) Calculation of 'F' value and finding out the probability value for the F value.

**Suggested Readings**

1. Biostatistic, Danniell, W.W., 1987. New York, John Wiley Sons.
2. An introduction to Biostatistics, 3rd edition, Sundarrao, P.S.S and Richards, J. Christian Medical College, Vellore
3. Statistical Analysis of epidemiological data, Selvin, S., 1991. New York University Press.
4. Statistics for Biology, Boston, Bishop, O.N. Houghton, Mifflin.
5. The Principles of scientific research, Freedman, P. New York, Pergamon Press.
6. Statistics for Biologists, Campbell, R.C., 1998. Cambridge University Press.

## Generic Elective

### Plant Ecology and Taxonomy (BTG 1.4)

Credits: Theory-4, Practical-2)

#### THEORY

Lectures: 60

#### Unit 1: Introduction and Ecological factors

(12 lectures)

Soil: Origin, formation, composition, soil profile. Water: States of water in the environment, precipitation types. Light and temperature: Variation Optimal and limiting factors; Shelfordlaw of tolerance. Adaptation of hydrophytes and xerophytes

#### Unit 2: Plant communities and Ecosystem

(14 lectures)

Characters; Ecotone and edge effect; Succession; Processes and types Structure; energy flow trophic organisation; Food chains and food webs, Ecological pyramids production and productivity; Biogeochemical cycling; Cycling of carbon, nitrogen and Phosphorous

#### Unit 3: Phytogeography (4 lectures)

Principle biogeographical zones; Endemism (with special reference to Nagaland)

#### Unit 4: Introduction to plant taxonomy, botanical nomenclature and classification

(14 lectures)

Identification, Nomenclature: Principles and rules (ICN); ranks and names; binominal system, typification, author citation, valid publication, rejection of names, principle of priority and its limitations. Classification: Types of classification-artificial, natural and phylogenetic. Bentham and Hooker (upto series), Engler and Prantl (upto series).

#### Unit 5 Identification and Taxonomic evidences from palynology, cytology, phytochemistry and molecular data.(10 lectures)

Functions of Herbarium, important herbaria and botanical gardens of the world and India; Documentation: Flora, Keys: single access and multi-access

#### Practical

1. Study of instruments used to measure microclimatic variables: Soil thermometer, maximum and minimum thermometer, anemometer, psychrometer/hygrometer, rain gauge and lux mete
2. Determination of pH, and analysis of two soil samples for carbonates, chlorides, nitrates, sulphates, organic matter and base deficiency by rapid field test.
3. Comparison of bulk density, porosity and rate of infiltration of water in soil of three habitats.
4. (a) Study of morphological adaptations of hydrophytes and xerophytes (four each).  
(b) Study of biotic interactions of the following: Stem parasite (*Cuscuta*), Root parasite (*Orobancha*), Epiphytes, Predation (Insectivorous plants)
5. Determination of minimal quadrat size for the study of herbaceous vegetation in the college campus by species area curve method. (species to be listed)
6. Quantitative analysis of herbaceous vegetation in the college campus for frequency and comparison with Raunkiaer's frequency distribution law
7. Study of vegetative and floral characters of the following families (Description, V.S. flower, section of ovary, floral diagram/s, floral formula/e and systematic position according to Bentham & Hooker's system of classification):Brassicaceae - *Brassica, Alyssum / Iberis*; Asteraceae -*Sonchus/Launaea, Vernonia/Ageratum, Eclipta/Tridax*; Solanaceae -*Solanumnigrum, Withania*; Lamiaceae -*Salvia, Ocimum*; Liliaceae - *Asphodelus / Lilium / Allium*.
8. Mounting of a properly dried and pressed specimen of any wild plant with herbarium label (to be submitted in the record book).

#### Suggested Readings

1. Kormondy, E.J. (1996). Concepts of Ecology. Prentice Hall, U.S.A. 4th edition.
2. Sharma, P.D. (2010) Ecology and Environment. Rastogi Publications, Meerut, India. 8th edition.
3. Simpson, M.G. (2006). *Plant Systematics*. Elsevier Academic Press, San Diego, CA, U.S.A.
4. Singh, G. (2012). *Plant Systematics: Theory and Practice*. Oxford & IBH Pvt. Ltd., New Delhi. 3rd edition.

**Plant Anatomy and Embryology (BTG 2.4)**  
**(Credits: Theory-4, Practical-2)**  
**THEORY**  
**Lectures: 60**

- Unit 1: Meristematic ,permanent tissues and Organs** (12 lectures)  
Root and shoot apical meristems; Simple and complex tissues Structure of dicot and monocot root ,stem and leaf.
- Unit 2: Secondary Growth ,adaptive and protective system** (16 lectures)  
Vascular cambium – structure and function, seasonal activity. Secondary growth in root and stem, Wood (heartwood and sapwood) Epidermis, cuticle, stomata; General account of adaptations in xerophytes and hydrophytes.
- Unit 3: Structural organization of flower** (8 lectures)  
Structure of anther and pollen; Structure and types of ovules; Types of embryo sacs, organization and ultrastructure of mature embryo sac.
- Unit 4: Pollination and fertilization** (8 lectures)  
Pollination mechanisms and adaptations; Double fertilization; Seed-structure appendages and dispersal mechanisms.
- Unit 5: Embryo and ,Apomixis and Polyembryology** (16lectures)  
Endosperm types, structure and functions; Dicot and monocot embryo; Embryo endosperm relationship) Apomixis and polyembryony: Definition, types and Practical applications.

**Practical**

1. Study of meristems through permanent slides and photographs.
2. Tissues (parenchyma, collenchyma and sclerenchyma); Macerated xylary elements, 69 Phloem (Permanent slides, photographs)
3. Stem: Monocot: *Zea mays*; Dicot: *Helianthus*; Secondary: *Helianthus* (only Permanent slides).
4. Root: Monocot: *Zea mays*; Dicot: *Helianthus*; Secondary: *Helianthus* (only Permanent slides).
5. Leaf: Dicot and Monocot leaf (only Permanent slides).
6. Adaptive anatomy: Xerophyte (*Nerium* leaf); Hydrophyte (*Hydrilla* stem).
7. Structure of anther (young and mature), tapetum (amoeboid and secretory) (Permanent slides).
8. Types of ovules: anatropous, orthotropous, circinotropous, amphitropous/ campylotropous.
9. Female gametophyte: *Polygonum* (monosporic) type of Embryo sac Development (Permanent slides/photographs).
10. Ultrastructure of mature egg apparatus cells through electron micrographs.
11. Pollination types and seed dispersal mechanisms (including appendages, aril, caruncle) (Photographs and specimens).
12. Dissection of embryo/endosperm from developing seeds.
13. Calculation of percentage of germinated pollen in a given medium.

**Suggested Readings**

1. Bhojwani, S.S. & Bhatnagar, S.P. (2011). Embryology of Angiosperms. Vikas Publication House Pvt. Ltd. New Delhi. 5th edition.
2. Mauseth, J.D. (1988). Plant Anatomy. The Benjamin/Cummings Publisher, USA.



**Plant Physiology and Metabolism (BTG 3.5)**  
**(Credits: Theory-4, Practical-2)**  
**THEORY**  
**Lectures: 60**

**Unit 1: Plant-water relations**

**(8 lectures)**

Importance of water, water potential and its components; Transpiration and its significance; Factors affecting transpiration; Root pressure and guttation.

**Unit 2: Mineral nutrition and translocation in Phloem**

**(14 lectures)**

Essential elements, macro and micronutrients; Criteria of essentiality of elements; Role of essential elements; Transport of ions across cell membrane, active and passive transport, carriers, channels and pumps. Composition of phloem sap, girdling experiment; Pressure flow model; Phloem loading and Unloading

**(10 lectures)**

**Unit 3: Photosynthesis and plant response to light and temperature**

**(18lectures)**

Photosynthetic Pigments (Chl a, b, xanthophylls, carotene); Photosystem I and II, reaction center, antenna molecules; Electron transport and mechanism of ATP synthesis; C<sub>3</sub>, C<sub>4</sub> and CAM pathways of carbon fixation; Photorespiration. Photoperiodism (SDP, LDP, Day neutral plants); Phytochrome (discovery and structure), red and far red light responses on photomorphogenesis; Vernalization.

**Unit 4: Respiration and nitrogen metabolism**

**(10 lectures)**

Glycolysis, anaerobic respiration, TCA cycle; Oxidative phosphorylation, Glyoxylate, Oxidative Pentose Phosphate Pathway. Biological nitrogen fixation; Nitrate and ammonia assimilation.

**Unit 5: Enzymes and plant growth regulators**

**(10 lectures)**

Structure and properties; Mechanism of enzyme catalysis and enzyme inhibition. Discovery and physiological roles of auxins, gibberellins, cytokinins, ABA, ethylene.

**Practical**

1. Determination of osmotic potential of plant cell sap by plasmolytic method.
2. To study the effect of two environmental factors (light and wind) on transpiration by excised twig.
3. Calculation of stomatal index and stomatal frequency of a mesophyte and a xerophyte.
4. Demonstration of Hill reaction.
5. Demonstrate the activity of catalase and study the effect of pH and enzyme concentration.
6. To study the effect of light intensity and bicarbonate concentration on O<sub>2</sub> evolution in photosynthesis.
7. Comparison of the rate of respiration in any two parts of a plant.
8. Separation of amino acids by paper chromatography.

**Demonstration experiments (any four)**

1. Bolting.
2. Effect of auxins on rooting.
3. Suction due to transpiration.
4. R.Q.
5. Respiration in roots.

**Suggested Readings**

3. Taiz, L., Zeiger, E., Møller, I.M. and Murphy, A (2015). Plant Physiology and Development. Sinauer Associates Inc. USA. 6<sup>th</sup> edition.
1. Hopkins, W.G., Huner, N.P., (2009). Introduction to Plant Physiology. John Wiley & Sons, U.S.A. 4<sup>th</sup> Edition.
2. Bajracharya, D., (1999). Experiments in Plant Physiology- A Laboratory Manual. Narosa Publishing House, New Delhi.

## **Economic Botany and Biotechnology (BTG 4.5)**

**(Credits: Theory-4, Practical-2)**

### **THEORY**

**Lectures: 60**

#### **Unit 1: Origin of Cultivated Plants**

**(4 lectures)**

Concept of centres of origin, their importance with reference to Vavilov's work.

#### **Unit 2: Cereals, Legumes and Spices**

**(16 lectures)**

Wheat -Origin, morphology, uses General account with special reference to Gram and soybean  
General account with special reference to clove and black pepper (Botanical name, family, part used, morphology and uses)

#### **Unit 3: Beverages, Oil and Fats, Fibre Yielding Plants**

**(12 lectures)**

Tea (morphology, processing, uses)

General description with special reference to groundnut and sunflower.

General description with special reference to Cotton (Botanical name, family, part used, morphology and uses)

#### **Unit 4: Introduction to biotechnology and Plant Tissue Culture**

**(10 lectures)**

Plant Biotechnology, Scope of Plant Biotechnology, Plant Tissue Culture, Micropropagation; haploid production through androgenesis and gynogenesis; brief account of embryo and endosperm culture with their applications

#### **Unit 5: Recombinant DNA Techniques**

**(18 lectures)**

Blotting techniques: Northern, Southern and Western Blotting, DNA Fingerprinting; Molecular markers i.e. RAPD, RFLP, SNPs; DNA sequencing, PCR and Reverse Transcriptase-PCR. Hybridoma and monoclonal antibodies, ELISA and Immunodetection. Molecular diagnosis of human disease, Human gene Therapy.

#### **Practical**

1. Study of economically important plants : Wheat, Gram, Soybean, Black pepper, Clove Tea, Cotton, Groundnut through specimens, sections and microchemical tests
2. Familiarization with basic equipments in tissue culture.
3. Study through photographs: Anther culture, somatic embryogenesis, endosperm and embryo culture; micropropagation.
4. Study of molecular techniques: PCR, Blotting techniques, AGE and PAGE.

#### **Suggested Readings**

1. Kochhar, S.L. (2011). Economic Botany in the Tropics, MacMillan Publishers India Ltd., New Delhi. 4th edition.
2. Bhojwani, S.S. and Razdan, M.K., (1996). Plant Tissue Culture: Theory and Practice. Elsevier Science Amsterdam. The Netherlands.
3. Glick, B.R., Pasternak, J.J. (2003). Molecular Biotechnology- Principles and Applications of recombinant DNA. ASM Press, Washington.

## Skill Enhancement Course

### Herbal Technology (BTS 3.4)

(Credits 2)

Lectures: 30

**Unit 1:** Herbal medicines: history and scope - definition of medical terms - role of medicinal plants in Siddha systems of medicine; cultivation - harvesting - processing - storage - marketing and utilization of medicinal plants. (6 Lectures)

**Unit 2:** Pharmacognosy - systematic position medicinal uses of the following plants in curing various ailments; Tulsi, Ginger, Fenugreek, Indian Goose berry and Ashoka. (6 Lectures)

**Unit 3:** Phytochemistry - active principles and methods of their testing - identification and utilization of the medicinal herbs; *Catharanthus roseus* (cardiotonic), *Withania somnifera* (drugs acting on nervous system), *Clerodendron phlomoides* (anti-rheumatic) and *Centella asiatica* (memory booster). (6 Lectures)

**Unit 4:** Analytical pharmacognosy: Drug adulteration - types, methods of drug evaluation - Biological testing of herbal drugs - Phytochemical screening tests for secondary metabolites (alkaloids, flavonoids, steroids, triterpenoids, phenolic compounds) (8 Lectures)

**Unit 5:** Medicinal plant banks micro propagation of important species (*Withania somnifera*, neem and tulsi- Herbal foods-future of pharmacognosy) (4 Lectures)

#### Suggested Readings

1. Glossary of Indian medicinal plants, R.N.Chopra, S.L.Nayar and I.C.Chopra, 1956. C.S.I.R, New Delhi.
2. The indigenous drugs of India, Kanny, Lall, Dey and Raj Bahadur, 1984. International Book Distributors.
3. Herbal plants and Drugs Agnes Arber, 1999. Mangal Deep Publications.
4. Ayurvedic drugs and their plant source. V.V. Sivarajan and Balachandran Indra 1994. Oxford IBH publishing Co.
5. Ayurveda and Aromatherapy. Miller, Light and Miller, Bryan, 1998. Banarsidass, Delhi.
6. Principles of Ayurveda, Anne Green, 2000. Thomsons, London.
7. Pharmacognosy, Dr.C.K.Kokate et al. 1999. Nirali Prakashan.

## **Mushroom Cultivation (BTS 4.4)**

**(Credits 2)**

**Lectures: 30**

**Unit 1:Introduction and history.** Nutritional and medicinal value of edible mushrooms; Poisonous mushrooms.Types of edible mushrooms available in India - *Volvariellavolvacea*, *Pleurotus citrinopileatus*, *Agaricusbisporus*. **(5 Lectures)**

**Unit 2:Cultivation Technology :** Infrastructure: substrates (locally available) Polythene bag, vessels, Inoculation hook, inoculation loop, low cost stove, sieves, culture rack, mushroom unit (Thatched house) water sprayer, tray, small polythene bag. Pure culture: Medium, sterilization, preparation of spawn, multiplication. **(6 lectures)**

**unt 3:Mushroom bed preparation** - paddy straw, sugarcane trash, maize straw, banana leaves. Factors affecting the mushroom bed preparation..Low cost technology, Composting technology in mushroom production. **(6 Lectures)**

**Unit 4:Storage and nutrition :** Short-term storage (Refrigeration - upto 24 hours) Long term Storage (canning, pickels, papads), drying, storage in saltsolutions. Nutrition - Proteins - amino acids, mineral elements nutrition - Carbohydrates, Crude fibre content - Vitamins. **(8 Lectures)**

**Unit 5:Food Preparation\_:**Types of foods prepared from mushroom.Research Centres - National level and Regional level.Cost benefit ratio - Marketing in India and abroad, Export Value **(5 lectures)**

1. Marimuthu, T. Krishnamoorthy, A.S. Sivaprakasam, K. and Jayarajan. R (1991) Oyster Mushrooms, Department of Plant Pathology, Tamil Nadu Agricultural University, Coimbatore.
2. Swaminathan, M. (1990) Food and Nutrition. Bappco, The Bangalore Printing and Publishing Co. Ltd., No. 88, Mysore Road, Bangalore - 560018.
3. Tewari, Pankaj Kapoor, S.C., (1988). Mushroom cultivation, Mittal Publications, Delhi.
4. Nita Bahl (1984-1988) Hand book of Mushrooms, II Edition, Vol. I & Vol. II.

**CHEMISTRY HONOURS SYLLABUS**  
**THREE YEAR DEGREE COURSE**  
**SEMESTER SYSTEM**  
 (Under New UGC CBCS Guidelines)

**DEPARTMENT OF CHEMISTRY**  
**St. Joseph's College, Jakhama**

**COURSE STRUCTURE**

SEMESTER	CORE COURSE (C)	ABILITY ENHANCEMENT COURSE (A)	SKILLED ENHANCEMENT COURSE (S)	DISCIPLINE SPECIFIC ELECTIVE: (D)	GENERIC ELECTIVE (G)
I	CHC 1.1 INORGANIC CHEMISTRY: I	EGA 1.3 ENGLISH COMMUNICATION			CHG 1.4 INORGANIC I AND ORGANIC I
	CHC 1.2 PHYSICAL CHEMISTRY: I				
II	CHC 2.1 ORGANIC CHEMISTRY: I	ESA 2.3 ENVIRONMENTAL STUDIES			CHG 2.4 PHYSICAL I AND ORGANIC II
	CHC 2.2 PHYSICAL CHEMISTRY: II				
III	CHC 3.1 INORGANIC CHEMISTRY: II		CHS 3.4 PESTICIDE CHEMISTRY		CHG 3.5 PHYSICAL II AND ORGANIC III
	CHC 3.2 ORGANIC CHEMISTRY: II				
	CHC 3.3 PHYSICAL CHEMISTRY: III				
IV	CHC 4.1 INORGANIC CHEMISTRY: III		CHS 4.4 FUEL CHEMISTRY		CHG 4.5 INORGANIC CHEMISTRY II
	CHC 4.2 ORGANIC CHEMISTRY: III				
	CHC 4.3 PHYSICAL CHEMISTRY: IV				
V	CHC 5.1 ORGANIC CHEMISTRY: IV			CHD 5.3 ANALYTICAL METHODS IN CHEMISTRY	
	CHC 5.2 PHYSICAL CHEMISTRY: V			CHD 5.4 RESEARCH METHODOLOGY IN CHEMISTRY	
VI	CHC 6.1 INORGANIC CHEMISTRY: IV			CHD 6.3 GREEN CHEMISTRY	
	CHC 6.2 ORGANIC CHEMISTRY: V			CHD 6.4 PROJECT/DISSERTATION	
<b>No. Of Credits</b>	<b>14 (84)</b>	<b>2 (4)</b>	<b>2 (4)</b>	<b>4 (24)</b>	<b>4 (24)</b>

## Core Course

### CHC 1.1: INORGANIC CHEMISTRY -I (Credits: Theory 04, Practical 02) THEORY: 60 LECTURES

#### UNIT I: Atomic Structure (14 Lectures)

Bohr's theory, its limitations and atomic spectrum of hydrogen atom. Wave mechanics: de Broglie equation, Heisenberg's Uncertainty Principle and its significance, Schrödinger's wave equation, significance of  $\psi$  and  $\psi^2$ . Quantum numbers and their significance. Normalized and orthogonal wave functions. Sign of wave functions. Radial and angular wave functions for hydrogen atom. Radial and angular distribution curves. Shapes of *s*, *p*, *d* and *f* orbitals. Contour boundary and probability diagrams.

Pauli's Exclusion Principle, Hund's rule of maximum multiplicity, Aufbau's principle and its limitations, Variation of orbital energy with atomic number.

#### UNIT II: Periodicity of Elements (16 Lectures)

*s*, *p*, *d*, *f* block elements, the long form of periodic table. Detailed discussion of the following properties of the elements, with reference to *s* and *p*- block:

- Effective nuclear charge, shielding or screening effect, Slater rules, variation of effective nuclear charge in periodic table.
- Atomic radii (van der Waals)
- Ionic and crystal radii.
- Covalent radii (octahedral and tetrahedral)
- Ionization enthalpy, Successive ionization enthalpies and factors affecting ionization energy.
- Electron gain enthalpy, trends of electron gain enthalpy.
- Electronegativity, Pauling's/ Mulliken's/ Allred Rachow's/ and Mulliken-Jaffé's electronegativity scales. Variation of electronegativity with bond order, partial charge, hybridization, group electronegativity. Sanderson's electron density ratio.

#### UNIT III: Chemical Bonding-I (12 Lectures)

- Ionic bond*: General characteristics, types of ions, size effects, radius ratio rule and its limitations. Born-Landé equation with derivation and importance of Kapustinskii expression for lattice energy. Derivation of Madelung constant, Born-Haber cycle and its applications, Solvation energy.
- Metallic Bond*: Qualitative idea of valence bond and band theories. Conductors, Semiconductors and insulators.
- Weak Chemical Forces*: van der Waals forces, ion-dipole forces, dipole-dipole interactions, induced dipole interactions, Instantaneous dipole-induced dipole interactions. Repulsive forces, Hydrogen bonding (theories of hydrogen bonding by valence bond treatment); Effects of melting, boiling points and solubility, energetics of dissolution process.

#### UNIT IV: Chemical Bonding-II (12 Lectures)

**Covalent bond**: Lewis structure, Valence Bond theory (Heitler-London approach). Hybridisation; types of hybridization, Energetics of hybridization, equivalent and non-equivalent hybrid orbitals, Resonance and resonance energy, Resonance structures of  $\text{CO}_3^{2-}$ ,  $\text{NO}_3^-$ ,  $\text{SO}_4^{2-}$ ,  $\text{SO}_2$ ,  $\text{SO}_3$ . Molecular orbital theory. Molecular orbital diagrams of diatomic  $\text{N}_2$ ,  $\text{O}_2$ ,  $\text{F}_2$ ,  $\text{CO}$ ,  $\text{NO}$ , and their ions; Formal charge, Valence shell electron pair repulsion theory (VSEPR), shapes of simple molecules and ions containing lone pairs and bond pairs of electrons:  $\text{BeF}_2$ ,  $\text{BF}_3$ ,  $\text{H}_3\text{O}^+$ ,  $\text{NH}_3$ ,  $\text{H}_2\text{O}$ ,  $\text{H}_2\text{S}$ ,  $\text{O}_3$ ,  $\text{BO}_3^{3-}$ ,  $\text{PCl}_5$ ,  $\text{SF}_4$ ,  $\text{SF}_6$ .

#### UNIT V: Oxidation-reduction (6 Lectures)

General concept. Electrochemical series and its applications, Latimer diagram (chlorine in acidic and basic medium), disproportionation of  $\text{H}_2\text{O}_2$  into  $\text{O}_2$  and  $\text{H}_2\text{O}$  under acidic conditions, Pourbaix diagram (iron species in natural water).

#### Reference Books:

- Lee, J.D. *Concise Inorganic Chemistry* ELBS, 1991.
- Douglas, B.E. and McDaniel, D.H. *Concepts & Models of Inorganic Chemistry* Oxford, 1970
- Atkins, P.W. & Paula, J. *Physical Chemistry*, 10th Ed., Oxford University Press, 2014.
- Day, M.C. and Selbin, J. *Theoretical Inorganic Chemistry*, ACS Publications, 1962.
- Rodger, G.E. *Inorganic and Solid State Chemistry*, Cengage Learning India Edition, 2002.

## Practical: 60 LECTURES

### (A) Titrimetric Analysis

- (i) Calibration and use of apparatus
- (ii) Preparation of solutions of different Molarity/Normality of titrants

### (B) Acid-Base Titrations

- (I) Estimation of carbonate and hydroxide present together in mixture.
- (ii) Estimation of carbonate and bicarbonate present together in a mixture.
- (iii) Estimation of free alkali present in different soaps/detergents

### (C) Oxidation-Reduction Titrimetry

- (i) Estimation of Fe(II) and oxalic acid using standardized  $\text{KMnO}_4$  solution.
- (ii) Estimation of oxalic acid and sodium oxalate in a given mixture.
- (iii) Estimation of Fe(II) with  $\text{K}_2\text{Cr}_2\text{O}_7$  using internal (diphenylamine, anthranilic acid) and external indicator.

### Reference text:

1. Mendham, J., A. I. Vogel's *Quantitative Chemical Analysis 6th Ed.*, Pearson, 2009.

## CHC 1.2: PHYSICAL CHEMISTRY-I (Credits: Theory-04, Practicals-02)

### Theory: 60 Lectures

#### UNIT I: Gaseous state (18 Lectures)

Kinetic molecular model of a gas: postulates and derivation of the kinetic gas equation; collision frequency; collision diameter; mean free path and viscosity of gases, including their temperature and pressure dependence, relation between mean free path and coefficient of viscosity, calculation of  $\sigma$  from  $\eta$ ; variation of viscosity with temperature and pressure.

Maxwell distribution and its use in evaluating molecular velocities (average, root mean square and most probable) and average kinetic energy, law of equipartition of energy, degrees of freedom and molecular basis of heat capacities.

Behaviour of real gases: Deviations from ideal gas behaviour, compressibility factor,  $Z$ , and its variation with pressure for different gases. Vander Waals equation of state, its derivation and application in explaining real gas behaviour, mention of other equations of state (Berthelot, Dieterici); virial equation of state; van der Waals equation expressed in virial form and calculation of Boyle temperature. Isotherms of real gases and their comparison with van der Waals isotherms, continuity of states, critical state, relation between critical constants and van der Waals constants, law of corresponding states.

#### UNIT II: Liquid State (6 Lectures)

Qualitative treatment of the structure of the liquid state; Radial distribution function; physical properties of liquids; vapour pressure, surface tension and coefficient of viscosity, and their determination. Effect of addition of various solutes on surface tension and viscosity. Explanation of cleansing action of detergents. Temperature variation of viscosity of liquids and comparison with that of gases. Qualitative discussion of structure of water.

### **UNIT III: Solid state (16 Lectures)**

Nature of the solid state, law of constancy of interfacial angles, law of rational indices, Miller indices, elementary ideas of symmetry, symmetry elements and symmetry operations, qualitative idea of point and space groups, seven crystal systems and fourteen Bravais lattices; X-ray dif fraction, Bragg's law, a simple account of rotating crystal method and powder pattern method. Analysis of powder diffraction patterns of NaCl, CsCl and KCl. Defects in crystals. Glasses and liquid crystals.

### **UNIT IV: Ionic Equilibria (20 Lectures)**

Strong, moderate and weak electrolytes, degree of ionization, factors affecting degree of ionization, ionization constant and ionic product of water. Ionization of weak acids and bases, pH scale, common ion effect, dissociation constants of mono-, di- and triprotic acids (exact treat-ment).

Salt hydrolysis- calculation of hydrolysis constant, degree of hydrolysis and pH for different salts. Buffer solutions; derivation of Henderson equation and its applications; buffer capacity, buffer range, buffer action and applications of buffers in analytical chemistry and biochemical proc-esses in the human body.

Solubility and solubility product of sparingly soluble salts – applications of solubility product principle. Qualitative treatment of acid – base titration curves (calculation of pH at various stages). Theory of acid–base indicators; selection of indicators and their limitations. Multistage equilibria in polyelectrolyte systems; hydrolysis and hydrolysis constants.

#### **Reference Books:**

1. Atkins, P. W. & Paula, J. de *Atkin's Physical Chemistry* 10th Ed., Oxford University Press (2014).
2. Ball, D. W. *Physical Chemistry* Thomson Press, India (2007).
3. Castellan, G. W. *Physical Chemistry* 4th Ed. Narosa (2004).
4. Mortimer, R. G. *Physical Chemistry* 3rd Ed. Elsevier: NOIDA, UP (2009).



## Practical: 60 LECTURES

1. **Surface tension measurements.**
  - a. Determine the surface tension by (i) drop number (ii) drop weight method.
  - b. Study the variation of surface tension of detergent solutions with concentration.
  
2. **Viscosity measurement using Ostwald's viscometer.**
  - a. Determination of viscosity of aqueous solutions of  
(i) Ethanol and (ii) pgar at room temperature.
  - b. Study the variation of viscosity of sucrose solution with the concentration of solute.
  
3. **pH metry**
  - a. Study the effect on pH of addition of HCl/NaOH to solutions of acetic acid, sodium acetate and their mixtures.
  - b. Preparation of buffer solutions of different pH
    - i. Sodium acetate-acetic acid
    - ii. Ammonium chloride-ammonium hydroxide
  - c. pH metric titration of (i) strong acid vs. strong base, (ii) weak acid vs. strong base.
  - d. Determination of dissociation constant of a weak acid.

### **Reference Books:**

1. Khosla, B. D.; Garg, V. C. & Gulati, A. *Senior Practical Physical Chemistry*, R. Chand & Co.: New Delhi (2011).
2. Garland, C. W.; Nibler, J. W. & Shoemaker, D. P. *Experiments in Physical Chemistry 8th Ed.*; McGraw-Hill: New York (2003).
3. Halpern, A. M. & McBane, G. C. *Experimental Physical Chemistry 3rd Ed.*; W.H. Freeman & Co.: New York (2003).

**CHC 2.1: Organic Chemistry-I (Credits: Theory-04, Practicals-02)**  
**THEORY: 60 LECTURES**

**UNIT I: Basics of Organic Chemistry (6 Lectures)**

*Organic Compounds:* Classification, and Nomenclature, Hybridization, Shapes of molecules, Influence of hybridization on bond properties.

*Electronic Displacements:* Inductive, electromeric, resonance and mesomeric effects, hyperconjugation and their applications; Dipole moment; Organic acids and bases; their relative strength.

Homolytic and Heterolytic fission with suitable examples. Curly arrow rules, formal charges; Electrophiles and Nucleophiles; Nucleophilicity and basicity; Types, shape and their relative stability of Carbocations, Carbanions, Free radicals and Carbenes.

Introduction to types of organic reactions and their mechanism: Addition, Elimination and Substitution reactions.

**UNIT II: Stereochemistry (18 Lectures)**

Fischer Projection, Newmann and Sawhorse Projection formulae and their interconversions; Geometrical isomerism: cis–trans and, syn-anti isomerism E/Z notations with C.I.P rules.

*Optical Isomerism:* Optical Activity, Specific Rotation, Chirality/Asymmetry, Enantiomers, Molecules with two or more chiral-centres, Distereoisomers, meso structures, Racemic mixture and resolution. Relative and absolute configuration: D/L and R/S designations.

**UNIT III: Chemistry of Aliphatic Hydrocarbons (24 Lectures)**

**A. Carbon-Carbon sigma bonds**

Chemistry of alkanes: Formation of alkanes, Wurtz Reaction, Wurtz-Fittig Reactions, Free radical substitutions.

**B. Carbon-Carbon pi bonds**

Formation of alkenes and alkynes by elimination reactions, Mechanism of E1, E2, E1cb reactions. Saytzeff and Hofmann eliminations.

*Reactions of alkenes:* Electrophilic additions their mechanisms (Markownikoff/ Anti Markownikoff addition), mechanism of oxymercuration-demercuration, hydroboration oxidation, ozonolysis, reduction (catalytic and chemical), syn and anti-hydroxylation (oxidation). 1,2-and 1,4-addition reactions in conjugated dienes and, Diels-Alder reaction; Allylic and benzylic bromination and mechanism, e.g. propene, 1-butene, toluene, ethyl benzene.

*Reactions of alkynes:* Acidity, Electrophilic and Nucleophilic additions. Hydration to form carbonyl compounds, Alkylation of terminal alkynes.

**C. Cycloalkanes and Conformational Analysis**

Types of cycloalkanes and their relative stability, Baeyer strain theory, Conformation analysis of alkanes: Relative stability: Energy diagrams of cyclohexane: Chair, Boat and Twist boat forms; Relative stability with energy diagrams.

#### **UNIT IV: Aromatic Hydrocarbons (12 Lectures)**

*Aromaticity:* Hückel's rule, aromatic character of arenes, cyclic carbocations/carbanions and heterocyclic compounds with suitable examples. Electrophilic aromatic substitution: halogenation, nitration, sulphonation and Friedel-Craft's alkylation/acylation with their mechanism. Directing effects of the groups.

#### ***Reference Books:***

1. Morrison, R. N. & Boyd, R. N. Organic Chemistry, Dorling Kindersley (India) Pvt. Ltd. (Pearson Education).
2. Finar, I. L. Organic Chemistry (Volume 1), Dorling Kindersley (India) Pvt. Ltd. (Pearson Education).
3. Finar, I. L. Organic Chemistry (Volume 2: Stereochemistry and the Chemistry of Natural Products), Dorling Kindersley (India) Pvt. Ltd. (Pearson Education).
4. Eliel, E. L. & Wilen, S. H. Stereochemistry of Organic Compounds, Wiley: London, 1994.
5. Kalsi, P. S. Stereochemistry Conformation and Mechanism, New Age International, 2005.
6. McMurry, J.E. Fundamentals of Organic Chemistry, 7th Ed. Cengage Learning India Edition, 2013.

## Practical: 60 LECTURES

1. Detection of extra elements.
2. Functional group test for nitro, amine and amide groups.
3. Qualitative analysis of unknown organic compounds containing simple functional Groups (alcohols, carboxylic acids, phenols and carbonyl compounds)

### **Reference Books:**

1. Mann, F.G. & Saunders, B.C. Practical Organic Chemistry, Pearson Education (2009)
2. Furniss, B.S.; Hannaford, A.J.; Smith, P.W.G.; Tatchell, A.R. Practical Organic Chemistry, 5th Ed., Pearson (2012)
3. Ahluwalia, V.K. & Aggarwal, R. Comprehensive Practical Organic Chemistry: Preparation and Quantitative Analysis, University Press (2000).
4. Ahluwalia, V.K. & Dhingra, S. Comprehensive Practical Organic Chemistry: Qualitative Analysis, University Press (2000).

## CHC 2.2: Physical Chemistry- II (Credits: Theory-04, Practicals-02) Theory: 60 Lectures

### **UNIT I: Chemical Thermodynamics-I (12 Lectures)**

Intensive and extensive variables; state and path functions; isolated, closed and open systems; zeroth law of thermodynamics.

First law: Concept of heat,  $q$ , work,  $w$ , internal energy,  $U$ , and statement of first law; enthalpy,  $H$ , relation between heat capacities, calculations of  $q$ ,  $w$ ,  $U$  and  $H$  for reversible, irreversible and free expansion of gases (ideal and van der Waals) under isothermal and adiabatic conditions.

Second Law: Concept of entropy; thermodynamic scale of temperature, statement of the second law of thermodynamics; molecular and statistical interpretation of entropy. Calculation of entropy change for reversible and irreversible processes.

### **UNIT II: Chemical Thermodynamics-II (12 Lectures)**

Third Law: Statement of third law, concept of residual entropy, calculation of absolute entropy of molecules.

Thermochemistry: Heats of reactions: standard states; enthalpy of formation of molecules and ions and enthalpy of combustion and its applications; Hess law of constant summation, calculation of bond energy, bond dissociation energy and resonance energy from thermo chemical data, effect of temperature (Kirchhoff's equations) and pressure on enthalpy of reactions.

### **UNIT III: Free Energy Functions and Systems of Variable Composition (12 Lectures)**

- a. Free Energy Functions: Gibbs and Helmholtz energy; variation of  $S$ ,  $G$ ,  $A$  with  $T$ ,  $V$ ,  $P$ . Free energy change and spontaneity. Relation between Joule-Thomson coefficient and other thermodynamic parameters; inversion temperature; Gibbs-Helmholtz equation; Maxwell relations; thermodynamic equation of state.
- b. Systems of Variable Composition: Partial molar quantities; Gibbs-Duhem equation, chemical potential of ideal mixtures, change in thermodynamic functions in mixing of ideal gases.

#### **UNIT IV: Chemical Equilibrium: (12 Lectures)**

Criteria of thermodynamic equilibrium, degree of advancement of reaction, chemical equilibria in ideal gases, concept of fugacity. Thermodynamic derivation of relation between Gibbs free energy of reaction and reaction quotient. Equilibrium constants and their quantitative dependence on temperature, pressure and concentration. Free energy of mixing and spontaneity; thermodynamic derivation of relations between the various equilibrium constants  $K_p$ ,  $K_c$  and  $K_x$ . Le Chatelier principle (quantitative treatment);

#### **UNIT V: Solutions and Colligative Properties (12 Lectures)**

Dilute solutions; lowering of vapour pressure, Raoult's and Henry's Laws and their applications. Thermodynamic criteria for ideal solution. Thermodynamic derivation using chemical potential to derive relations between the four colligative properties [(i) relative lowering of vapour pressure, (ii) elevation of boiling point, (iii) Depression of freezing point, (iv) osmotic pressure] and amount of solute. Applications in calculating molar masses of normal, dissociated and associated solutes in solution.

#### **References Books:**

1. Peter, A. & Paula, J. de. Physical Chemistry 10th Ed., Oxford University Press (2014).
2. Castellan, G. W. Physical Chemistry 4th Ed., Narosa (2004).
3. Engel, T. & Reid, P. Physical Chemistry 3rd Ed., Prentice-Hall (2012).
4. McQuarrie, D. A. & Simon, J. D. Molecular Thermodynamics Viva Books Pvt. Ltd.: New Delhi (2004).
5. Assael, M. J.; Goodwin, A. R. H.; Stamatoudis, M.; Wakeham, W. A. & Will, S. Commonly Asked Questions in Thermodynamics. CRC Press: NY (2011).
6. Levine, I. N. Physical Chemistry 6th Ed., Tata Mc Graw Hill (2010).
7. Metz, C.R. 2000 solved problems in chemistry, Schaum Series (2006).

#### **Practical: 60 Lectures**

- (a) Determination of heat capacity of a calorimeter for different volumes using change of enthalpy data of a known system (method of back calculation of heat capacity of calorimeter from known enthalpy of solution or enthalpy of neutralization).
- (b) Determination of heat capacity of the calorimeter and enthalpy of neutralization of hydrochloric acid with sodium hydroxide.
- (c) Calculation of the enthalpy of ionization of ethanoic acid.
- (d) Determination of heat capacity of the calorimeter and integral enthalpy (endothermic and exothermic) solution of salts.
- (e) Determination of basicity/proticity of a polyprotic acid by the thermochemical method in terms of the changes of temperatures observed in the graph of temperature versus time for different additions of a base. Also calculate the enthalpy of neutralization of the first step.
- (f) Determination of enthalpy of hydration of copper sulphate.
- (g) Study of the solubility of benzoic acid in water and determination of  $\Delta H$ .
- (h) Any other experiment carried out in the class.

#### **Reference Books:**

1. Khosla, B. D.; Garg, V. C. & Gulati, A., Senior Practical Physical Chemistry, R. Chand & Co.: New Delhi (2011).
2. Athawale, V. D. & Mathur, P. Experimental Physical Chemistry New Age International: New Delhi (2001).

## CHC 3.1: INORGANIC CHEMISTRY-II (Credits: Theory-04, Practicals-02)

### Theory: 60 Lectures

#### UNIT I: General Principles of Metallurgy (6 Lectures)

Chief modes of occurrence of metals based on standard electrode potentials. Ellingham diagrams for reduction of metal oxides using carbon and carbon monoxide as reducing agent. Electrolytic Reduction, Hydrometallurgy. Methods of purification of metals: Electrolytic Kroll process, Parting process, van Arkel-de Boer process and Mond's process, Zone refining.

#### UNIT II: Acids and Bases (8 Lectures)

Arrhenius concept; Bronsted-Lowry concept, the solvent-system (Franklin) concept and its limitations; Lewis concept, relative strength of acids, levelling solvents, , Classification of Lewis acids, Hard and Soft Acids and Bases (HSAB). Applications of HSAB principle.

#### UNIT III: Chemistry of s and p Block Elements (30 Lectures)

Inert pair effect, Relative stability of different oxidation states, diagonal relationship and anomalous behaviour of first member of each group. Allotropy and catenation. Complex formation tendency of s and p block elements.

Study of the following compounds with emphasis on structure, bonding, preparation, properties and uses:

Boric acid and borates, boron nitrides, borohydrides (diborane), silanes, Oxides and oxoacids of nitrogen, Phosphorus and chlorine. Peroxo acids of sulphur, interhalogen compounds, polyhalide ions, pseudohalogens and basic properties of halogens.

#### UNIT IV: Noble Gases (8 Lectures)

Separation and isolation of helium, neon and argon from liquid air, study of the following compounds (preparation, structure and properties of  $\text{XeF}_2$ ,  $\text{XeF}_4$ , and  $\text{XeO}_3$  and  $\text{XeOF}_4$ ).

#### UNIT V: Inorganic Polymers (8 Lectures)

Types of inorganic polymers, comparison with organic polymers, synthesis, structural aspects and applications of silicones and siloxanes. Borazines, silicates and phosphazenes, and polysulphates.

#### Reference Books:

1. Lee, J.D. Concise Inorganic Chemistry, ELBS, 1991.
2. Douglas, B.E; Mc Daniel, D.H. & Alexander, J.J. Concepts & Models of Inorganic chemistry 3rd Ed., John Wiley Sons, N.Y. 1994.
3. Greenwood, N.N. & Earnshaw. Chemistry of the Elements, Butterworth-Heinemann. 1997.
4. Cotton, F.A. & Wilkinson, G. Advanced Inorganic Chemistry, Wiley, VCH, 1999.
5. Rodger, G.E. Inorganic and Solid State Chemistry, Cengage Learning India Edition, 2002.
6. Miessler, G. L. & Donald, A. Tarr. Inorganic Chemistry 4th Ed., Pearson, 2010.
7. Atkin, P. Shriver & Atkins' Inorganic Chemistry 5th Ed. Oxford University Press (2010).

## Practical: 60 Lectures

### (A) Iodo / Iodimetric Titrations

- (i) Estimation of Cu(II) and  $K_2Cr_2O_7$  using sodium thiosulphate solution (Iodimetrically).
- (ii) Estimation of (i) arsenite and (ii) antimony in tartar-emetic iodimetrically
- (iii) Estimation of available chlorine in bleaching powder iodometrically.

### (B) Inorganic preparations

- (i) Cuprous Chloride,  $Cu_2Cl_2$
- (ii) Preparation of Manganese(III) phosphate,  $MnPO_4 \cdot H_2O$
- (iii) Preparation of Aluminium potassium sulphate  $KAl(SO_4)_2 \cdot 12H_2O$  (Potash alum) Or Chrome alum.

### Reference Books:

1. Mendham, J., *A. I. Vogel's Quantitative Chemical Analysis 6th Ed.*, Pearson, 2009.

## CHC 3.2: ORGANIC CHEMISTRY-II (Credits: Theory-04, Practicals-02) Theory: 60 Lectures

### UNIT I: Chemistry of Halogenated Hydrocarbons (16 Lectures)

*Alkyl halides*: Methods of preparation, nucleophilic substitution reactions –  $S_N1$ ,  $S_N2$  and  $S_Ni$  mechanisms with stereochemical aspects and effect of solvent etc.; nucleophilic substitution vs. elimination.  
*Aryl halides*: Preparation, including preparation from diazonium salts. nucleophilic aromatic substitution;  $S_NAr$ , Benzyne mechanism. Relative reactivity of alkyl, allyl/benzyl, vinyl and aryl halides towards nucleophilic substitution reactions. Organometallic compounds of Mg and Li – Use in synthesis of organic compounds.

### UNIT II: Alcohols, Phenols, Ethers and Epoxides (16 Lectures)

*Alcohols*: Preparation, properties and relative reactivity of  $1^\circ$ ,  $2^\circ$ ,  $3^\circ$  alcohols, Bouvaelt-Blanc Reduction; Preparation and properties of glycols: Oxidation by periodic acid and lead tetraacetate, Pinacol-Pinacolone rearrangement;

*Phenols*: Preparation and properties; Acidity and factors effecting it, Ring substitution reactions, Reimer-Tiemann and Kolbe's-Schmidt Reactions, Fries and Claisen rearrangements with mechanism;

*Ethers and Epoxides*: Preparation and reactions with acids. Reactions of epoxides with alcohols, ammonia derivatives and  $LiAlH_4$ .

### UNIT III: Carbonyl Compounds (14 Lectures)

Structure, reactivity and preparation; Nucleophilic additions, Nucleophilic addition-elimination reactions with ammonia derivatives with mechanism; Mechanisms of Aldol and Benzoin condensation, Knoevenagel condensation, Claisen-Schmidt, Perkin, Cannizzaro and Wittig reaction, Beckmann and Benzil-Benzilic acid rearrangements, haloform reaction and Baeyer Villiger oxidation,  $\alpha$ - substitution reactions, oxidations and reductions (Clemmensen, Wolff-Kishner,  $LiAlH_4$ ,  $NaBH_4$ , MPV, PDC and PGC); Addition reactions of unsaturated carbonyl compounds: Michael addition.

Active methylene compounds: Keto-enol tautomerism. Preparation and synthetic applications of diethyl malonate and ethyl acetoacetate.

### UNIT IV: Carboxylic Acids and their Derivatives (10 Lectures)

Preparation, physical properties and reactions of monocarboxylic acids: Typical reactions of dicarboxylic acids, hydroxy acids and unsaturated acids: succinic/phthalic, lactic, malic, tartaric, citric, maleic and fumaric acids;

Preparation and reactions of acid chlorides, anhydrides, esters and amides; Comparative study of nucleophilic substitution at acyl group -Mechanism of acidic and alkaline hydrolysis of esters, Claisen

condensation, Dieckmann and Reformatsky reactions, Hofmannbromamide degradation and Curtius rearrangement.

#### UNIT V: Sulphur containing compounds (4 Lectures)

Preparation and reactions of thiols, thioethers and sulphonic acids.

##### Reference Books:

1. Morrison, R. T. & Boyd, R. N. *Organic Chemistry*, Dorling Kindersley (India) Pvt. Ltd. (Pearson Education).
2. Finar, I. L. *Organic Chemistry (Volume 1)*, Dorling Kindersley (India) Pvt. Ltd. (Pearson Education).
3. Graham Solomons, T.W. *Organic Chemistry*, John Wiley & Sons, Inc.
4. McMurry, J.E. *Fundamentals of Organic Chemistry*, 7th Ed. Cengage Learning India Edition, 2013.

#### Practical: 60 LECTURES

1. Functional group tests for alcohols, phenols, carbonyl and carboxylic acid group.
2. Organic preparations:
  - i. Acetylation of one of the following compounds: amines (aniline, *o*-, *m*-, *p*-toluidines and *o*-, *m*-, *p*-anisidine) and phenols ( $\beta$ -naphthol, vanillin, salicylic acid) by any one method:
    - a. Using conventional method.
    - b. Using green approach
  - ii. Benzoylation of one of the following amines (aniline, *o*-, *m*-, *p*-toluidines and *o*-, *m*-, *p*-anisidine) and one of the following phenols ( $\beta$ -naphthol, resorcinol, *p*-cresol) by Schotten-Baumann reaction.
  - iii. Oxidation of ethanol/ isopropanol (Iodoform reaction).
  - iv. Bromination of any one of the following:
    - a. Acetanilide by conventional methods
    - b. Acetanilide using green approach (Bromate-bromide method)
  - v. Nitration of any one of the following:
    - a. Acetanilide/nitrobenzene by conventional method
    - b. Salicylic acid by green approach (using ceric ammonium nitrate).
  - vi. Selective reduction of *meta* dinitrobenzene to *m*-nitroaniline.
  - vii. Reduction of *p*-nitrobenzaldehyde by sodium borohydride.

The above derivatives should be prepared using 0.5-1g of the organic compound. The solid samples must be collected and may be used for recrystallization, melting point and TLC.

##### Reference Books:

1. Mann, F.G. & Saunders, B.C. *Practical Organic Chemistry*, Pearson Education (2009)
2. Furniss, B.S., Hannaford, A.J., Smith, P.W.G. & Tatchell, A.R. *Practical Organic Chemistry, 5th Ed.* Pearson (2012)
3. Ahluwalia, V.K. & Aggarwal, R. *Comprehensive Practical Organic Chemistry: Preparation and Quantitative Analysis*, University Press (2000).
4. Ahluwalia, V.K. & Dhingra, S. *Comprehensive Practical Organic Chemistry: Qualitative Analysis*, University Press (2000).



## CHC 3.3: PHYSICAL CHEMISTRY-III (Credits: Theory-04, Practicals-02) Theory: 60 Lectures

### UNIT I: Phase Equilibria (28 Lectures)

Concept of phases, components and degrees of freedom, derivation of Gibbs Phase Rule for non-reactive and reactive systems; Clausius-Clapeyron equation and its applications to solid-liquid, liquid-vapour and solid-vapour equilibria, phase diagram for one component systems, with applications.

Phase diagrams for systems of solid-liquid equilibria involving eutectic, congruent and incongruent melting points, solid solutions.

Three component systems, water-chloroform-acetic acid system, triangular plots.

*Binary solutions:* Gibbs-Duhem-Margules equation, its derivation and applications to fractional distillation of binary miscible liquids (ideal and nonideal), azeotropes, lever rule, partial miscibility of liquids, CST, miscible pairs, steam distillation.

Nernst distribution law: its derivation and applications.

### UNIT II: Chemical Kinetics (18 Lectures)

Order and molecularity of a reaction, rate laws in terms of the advancement of a reaction, differential and integrated form of rate expressions up to second order reactions, experimental methods of the determination of rate laws, kinetics of complex reactions (integrated rate expressions up to first order only): (i) Opposing reactions (ii) parallel reactions and (iii) consecutive reactions and their differential rate equations (steady-state approximation in reaction mechanisms) (iv) chain reactions.

Temperature dependence of reaction rates; Arrhenius equation; activation energy. Collision theory of reaction rates, Lindemann mechanism, qualitative treatment of the theory of absolute reaction rates.

### UNIT III: Catalysis (8 Lectures)

Types of catalyst, specificity and selectivity, mechanisms of catalyzed reactions at solid surfaces; effect of particle size and efficiency of nanoparticles as catalysts. Enzyme catalysis, Michaelis-Menten mechanism, acid-base catalysis.

### UNIT IV: Surface chemistry (6 Lectures)

Physical adsorption, chemisorption, adsorption isotherms. nature of adsorbed state.

### Reference Books:

1. Peter Atkins & Julio De Paula, *Physical Chemistry* 10th Ed., Oxford University Press (2014).
2. Castellan, G. W. *Physical Chemistry*, 4th Ed., Narosa (2004).
3. McQuarrie, D. A. & Simon, J. D., *Molecular Thermodynamics*, Viva Books Pvt. Ltd.: New Delhi (2004).
4. Engel, T. & Reid, P. *Physical Chemistry 3rd Ed.*, Prentice-Hall (2012).
5. Assael, M. J.; Goodwin, A. R. H.; Stamatoudis, M.; Wakeham, W. A. & Will, S. *Commonly Asked Questions in Thermodynamics*. CRC Press: NY (2011).
6. Zundhal, S.S. *Chemistry concepts and applications* Cengage India (2011).
7. Ball, D. W. *Physical Chemistry* Cengage India (2012).
8. Mortimer, R. G. *Physical Chemistry 3rd Ed.*, Elsevier: NOIDA, UP (2009).
9. Levine, I. N. *Physical Chemistry 6th Ed.*, Tata McGraw-Hill (2011).
10. Metz, C. R. *Physical Chemistry 2nd Ed.*, Tata McGraw-Hill (2009).

## Practical: 60 LECTURES

- I. Determination of critical solution temperature and composition of the phenol-water system and to study the effect of impurities on it.
- II. Phase equilibria: Construction of the phase diagram using cooling curves or ignition tube method:
  - a. simple eutectic and
  - b. congruently melting systems.
- III. Distribution of acetic/ benzoic acid between water and cyclohexane.
- IV. Study the equilibrium of at least one of the following reactions by the distribution method:
  - (i)  $I_2(aq) + I^- \rightarrow I_3(aq)^{2-}$
  - (ii)  $Cu^{2+}(aq) + nNH_3 \rightarrow Cu(NH_3)_n$
- V. Study the kinetics of the following reactions.
  1. Initial rate method: Iodide-persulphate reaction
  2. Integrated rate method:
    - a. Acid hydrolysis of methyl acetate with hydrochloric acid.
    - b. Saponification of ethyl acetate.
3. Compare the strengths of HCl and H<sub>2</sub>SO<sub>4</sub> by studying kinetics of hydrolysis of methyl acetate.
- VI. Adsorption
  1. Verify the Freundlich and Langmuir isotherms for adsorption of acetic acid on activated charcoal.

### Reference Books:

1. Khosla, B. D.; Garg, V. C. & Gulati, A. *Senior Practical Physical Chemistry*, R. Chand & Co.: New Delhi (2011).
2. Garland, C. W.; Nibler, J. W. & Shoemaker, D. P. *Experiments in Physical Chemistry 8th Ed.*; McGraw-Hill: New York (2003).
3. Halpern, A. M. & McBane, G. C. *Experimental Physical Chemistry 3rd Ed.*; W.H. Freeman & Co.: New York (2003).

## CHC 4.1: INORGANIC CHEMISTRY-III (Credits: Theory-04, Practicals-02)

### Theory: 60 Lectures

#### UNIT I: Coordination Chemistry (24 Lectures)

Werner's theory, valence bond theory (inner and outer orbital complexes), electroneutrality principle and back bonding. Crystal field theory, measurement of  $10 Dq$  ( $\Delta_o$ ), CFSE in weak and strong fields, pairing energies, factors affecting the magnitude of  $10 Dq$  ( $\Delta_o$ ,  $\Delta_t$ ).

Octahedral vs. tetrahedral coordination, tetragonal distortions from octahedral geometry Jahn-Teller theorem, square planar geometry. Qualitative aspect of Ligand field and MO theory. IUPAC nomenclature of coordination compounds, isomerism in coordination compounds. Stereochemistry of complexes with 4 and 6 coordination numbers. Chelate effect, polynuclear complexes, Labile and inert complexes.

#### UNIT II: Transition Elements (16 Lectures)

General group trends with special reference to electronic configuration, colour, variable valency, magnetic and catalytic properties, and ability to form complexes. Stability of various oxidation states. Difference between the first, second and third transition series.

Chemistry of Ti, V, Cr, Mn, Fe and Co in various oxidation states (excluding their metallurgy).

#### UNIT III: Lanthanoids and Actinoids (10 Lectures)

Electronic configuration, oxidation states, ionic radii, lanthanide contraction, tendency to form complexes, colour, separation of lanthanides (ion-exchange method only). Chemistry of separation of Np, Pu and Am from U. Preparation, reactions, structure and uses of uraniumhexafluoride.

#### UNIT IV: Bioinorganic Chemistry (10 Lectures)

Metal ions present in biological systems, classification of elements according to their action in biological system. Geochemical effect on the distribution of metals. Sodium / K-pump, carbonic anhydrase and carboxypeptidase. Excess and deficiency of some trace metals.

Toxicity of metal ions (Hg, Pb, Cd and As), reasons for toxicity, Use of chelating agents in medicine. Iron and its application in bio-systems, Haemoglobin; Storage and transfer of iron.

#### Reference Books:

1. Purcell, K.F & Kotz, J.C. *Inorganic Chemistry* W.B. Saunders Co, 1977.
2. Huheey, J.E., *Inorganic Chemistry*, Prentice Hall, 1993.
3. Lippard, S.J. & Berg, J.M. *Principles of Bioinorganic Chemistry* Panima Publishing Company 1994.
4. Cotton, F.A. & Wilkinson, G, *Advanced Inorganic Chemistry* Wiley-VCH, 1999
5. Basolo, F, and Pearson, R.C. *Mechanisms of Inorganic Chemistry*, John Wiley & Sons, NY, 1967.
6. Greenwood, N.N. & Earnshaw A. *Chemistry of the Elements*, Butterworth-Heinemann, 1997.

### Practical: 60 LECTURES

#### Gravimetric Analysis

- i. Estimation of nickel (II) using Dimethylglyoxime (DMG).
- ii. Estimation of copper as  $\text{CuSCN}$
- iii. Estimation of iron as  $\text{Fe}_2\text{O}_3$  by precipitating iron as  $\text{Fe}(\text{OH})_3$ .
- iv. Estimation of Al (III) by precipitating with oxine and weighing as  $\text{Al}(\text{oxine})_3$  (aluminium oxinate).

### ***Inorganic Preparations***

- i. Tetraamminecopper (II) sulphate,  $[\text{Cu}(\text{NH}_3)_4]\text{SO}_4 \cdot \text{H}_2\text{O}$
- ii. *Cis* and *trans*  $\text{K}[\text{Cr}(\text{C}_2\text{O}_4)_2 \cdot (\text{H}_2\text{O})_2]$  Potassium dioxalatodiaquachromate (III)
- iii. Tetraamminecarbonatocobalt (III) ion
- iv. Potassium tris (oxalate)ferrate(III)

### ***Reference Book:***

1. Mendham, J., *A. I. Vogel's Quantitative Chemical Analysis 6th Ed.*, Pearson, 2009.

## **CHC4.2: ORGANIC CHEMISTRY-III (Credits: Theory-04, Practicals-02)** **Theory: 60 Lectures**

### **UNIT I: Nitrogen Containing Functional Groups (18 Lectures)**

Preparation and important reactions of nitro and compounds, nitriles and isonitriles Amines: Effect of substituent and solvent on basicity; Preparation and properties: Gabriel phthalimide synthesis, Carbylamine reaction, Mannich reaction, Hoffmann's exhaustive methylation, Hofmann-elimination reaction; Distinction between 1°, 2° and 3° amines with Hinsberg reagent and nitrous acid. Diazonium Salts: Preparation and their synthetic applications.

### **UNIT II: Polynuclear Hydrocarbons (8 Lectures)**

Reactions of naphthalene, phenanthrene and anthracene Structure, Preparation and structure elucidation and important derivatives of naphthalene and anthracene; Polynuclear hydrocarbons.

### **UNIT III: Heterocyclic Compounds (22 Lectures)**

Classification and nomenclature, Structure, aromaticity in 5-numbered and 6-membered rings containing one heteroatom; Synthesis, reactions and mechanism of substitution reactions of: Furan, Pyrrole (Paal-Knorr synthesis, Knorr pyrrole synthesis, Hantzsch synthesis), Thiophene, Pyridine (Hantzsch synthesis), Pyrimidine, Structure elucidation of indole, Fischer indole synthesis and Madelung synthesis), Structure elucidation of quinoline and isoquinoline, Skraup synthesis, Fried-lander's synthesis, Knorr quinoline synthesis, Doebner- Miller synthesis, Bischler-Napieralski reaction, Pictet-Spengler reaction, Pomeranz-Fritsch reaction.

Derivatives of furan: Furfural and furoic acid.

### **UNIT IV: Alkaloids (6 Lectures)**

Natural occurrence, General structural features, Isolation and their physiological action Hoffmann's exhaustive methylation, Emde's modification, Structure elucidation and synthesis of Hygrine and Nicotine. Medicinal importance of Nicotine, Hygrine, Quinine, Morphine, Cocaine, and Reserpine.

### **UNIT V: Terpenes (6 Lectures)**

Occurrence, classification, isoprene rule; Elucidation of structure and synthesis of Citral, Neral and  $\alpha$ -terpineol.

### ***Reference Books:***

1. Morrison, R. T. & Boyd, R. N. *Organic Chemistry*, Dorling Kindersley (India) Pvt. Ltd. (Pearson Education).
2. Finar, I. L. *Organic Chemistry (Volume 1)*, Dorling Kindersley (India) Pvt. Ltd. (Pearson Education).
3. Finar, I. L. *Organic Chemistry (Volume 2: Stereochemistry and the Chemistry of Natural Products)*, Dorling Kindersley (India) Pvt. Ltd. (Pearson Education).
4. Acheson, R.M. *Introduction to the Chemistry of Heterocyclic compounds*, John Welly & Sons (1976).

- Graham Solomons, T.W. *Organic Chemistry*, John Wiley & Sons, Inc.
- McMurry, J.E. *Fundamentals of Organic Chemistry*, 7th Ed. Cengage Learning India Edition, 2013.
- Kalsi, P. S. *Textbook of Organic Chemistry 1st Ed.*, New Age International (P) Ltd. Pub.
- Clayden, J.; Greeves, N.; Warren, S.; Wothers, P.; *Organic Chemistry*, Oxford University Press.
- Singh, J.; Ali, S.M. & Singh, J. *Natural Product Chemistry*, Prajati Parakashan (2010).

### Practical: 60 LECTURES

- Purification of organic compounds by crystallization using the following solvents:  
a. Water b. Alcohol c. Alcohol-Water
- Determination of the melting points of above compounds and unknown organic compounds (Kjeldahl method and electrically heated melting point apparatus)
- Effect of impurities on the melting point – mixed melting point of two unknown organic compounds
- Determination of boiling point of liquid compounds. (boiling point lower than and more than 100 °C by distillation and capillary method)
- Chromatography
  - Separation of a mixture of two amino acids by ascending paper chromatography
  - Separation of a mixture of two sugars by ascending paper chromatography
  - Separation of a mixture of o- and p-nitrophenol or o- and p-aminophenol by thin layer chromatography (TLC)

#### References Books:

- Mann, F.G. & Saunders, B.C. *Practical Organic Chemistry*, Pearson Education (2009)
- Furniss, B.S.; Hannaford, A.J.; Smith, P.W.G.; Tatchell, A.R. *Practical Organic Chemistry*, 5<sup>th</sup> Ed., Pearson (2012)

## CHC 4.3: PHYSICAL CHEMISTRY-IV (Credits: Theory-04, Practicals-02) Theory: 60 Lectures

### UNIT I: Conductance (20 Lectures)

Arrhenius theory of electrolytic dissociation. Conductivity, equivalent and molar conductivity and their variation with dilution for weak and strong electrolytes. Molar conductivity at infinite dilution. Kohlrausch law of independent migration of ions. Debye-Hückel-Onsager equation, Wien effect, Debye-Falkenhagen effect, Walden's rules.

Ionic velocities, mobilities and their determinations, transference numbers and their relation to ionic mobilities, determination of transference numbers using Hittorf and Moving Boundary methods. Applications of conductance measurement: (i) degree of dissociation of weak electrolytes, (ii) ionic product of water (iii) solubility and solubility product of sparingly soluble salts, (iv) conductometric titrations, and (v) hydrolysis constants of salts.

### UNIT II: Electrochemistry-I (20 Lectures)

Quantitative aspects of Faraday's laws of electrolysis, rules of oxidation/reduction of ions based on half-cell potentials, applications of electrolysis in metallurgy and industry.

Chemical cells, reversible and irreversible cells with examples. Electromotive force of a cell and its measurement, Nernst equation; Standard electrode (reduction) potential and its application to different kinds of half-cells. Application of EMF measurements in determining

(i) free energy, enthalpy and entropy of a cell reaction, (ii) equilibrium constants, and (iii) Ph values, using hydrogen, quinone-hydroquinone, glass and SbO/Sb<sub>2</sub>O<sub>3</sub> electrodes.

### UNIT III: Electrochemistry-II (8 Lectures)

Concentration cells with and without transference, liquid junction potential; determination of activity coefficients and transference numbers. Qualitative discussion of potentiometric titrations (acid-base, redox, precipitation).

### UNIT IV: Electrical & Magnetic Properties of Atoms and Molecules (12 Lectures)

Basic ideas of electrostatics, Electrostatics of dielectric media, Clausius-Mosotti equation, Lorenz-Laurentz equation, Dipole moment and molecular polarizabilities and their measurements. Diamagnetism, paramagnetism, magnetic susceptibility and its measurement, molecular interpretation.

#### Reference Books:

1. Atkins, P.W & Paula, J.D. *Physical Chemistry*, 10th Ed., Oxford University Press (2014).
2. Castellan, G. W. *Physical Chemistry 4th Ed.*, Narosa (2004).
3. Mortimer, R. G. *Physical Chemistry 3rd Ed.*, Elsevier: NOIDA, UP (2009).
4. Barrow, G. M., *Physical Chemistry 5th Ed.*, Tata McGraw Hill: New Delhi (2006).
5. Engel, T. & Reid, P. *Physical Chemistry 3rd Ed.*, Prentice-Hall (2012).
6. Rogers, D. W. *Concise Physical Chemistry* Wiley (2010).
7. Silbey, R. J.; Alberty, R. A. & Bawendi, M. G. *Physical Chemistry 4th Ed.*, John Wiley & Sons, Inc. (2005).

## Practical: 60 LECTURES

### Conductometry

- I. Determination of cell constant
- II. Determination of equivalent conductance, degree of dissociation and dissociation constant of a weak acid.
- III. Perform the following conductometric titrations:
  - i. Strong acid vs. strong base
  - ii. Weak acid vs. strong base
  - iii. Mixture of strong acid and weak acid vs. strong base
  - iv. Strong acid vs. weak base

### Potentiometry

- I. Perform the following potentiometric titrations:
  - i. Strong acid vs. strong base
  - ii. Weak acid vs. strong base
  - iii. Dibasic acid vs. strong base
  - iv. Potassium dichromate vs. Mohr's salt

#### Reference Books:

1. Khosla, B. D.; Garg, V. C. & Gulati, A. *Senior Practical Physical Chemistry*, R. Chand & Co.: New Delhi (2011).
2. Garland, C. W.; Nibler, J. W. & Shoemaker, D. P. *Experiments in Physical Chemistry 8th Ed.*; McGraw-Hill: New York (2003).
3. Halpern, A. M. & McBane, G. C. *Experimental Physical Chemistry 3rd Ed.*; W.H. Freeman & Co.: New York (2003).

## CHC 5.1: ORGANIC CHEMISTRY-IV (Credits: Theory-04, Practicals-02) Theory: 60 Lectures

### UNIT I: Nucleic Acids (12 Lectures)

Components of nucleic acids, Nucleosides and nucleotides; Structure, synthesis and reactions of: Adenine, Guanine, Cytosine, Uracil and Thymine; Structure of polynucleotides.

### UNIT II: Amino Acids, Peptides and Proteins (16 Lectures)

Amino acids, Peptides and their classification.

$\alpha$ -Amino Acids - Synthesis, ionic properties and reactions. Zwitterions,  $pK_a$  values, isoelectric point and electrophoresis; Study of peptides: determination of their primary structures-end group analysis, methods of peptide synthesis. Synthesis of peptides using N-protecting, C-protecting and C-activating groups -Solid-phase synthesis.

### UNIT III: Enzymes (10 Lectures)

Introduction, classification and characteristics of enzymes. Salient features of active site of enzymes. Mechanism of enzyme action (taking trypsin as example), factors affecting enzyme action, coenzymes and cofactors and their role in biological reactions, specificity of enzyme action (including stereospecificity), enzyme inhibitors and their importance, phenomenon of inhibition (competitive, uncompetitive and non-competitive inhibition including allosteric inhibition).

### UNIT IV: Lipids (10 Lectures)

Introduction to oils and fats; common fatty acids present in oils and fats, Hydrogenation of fats and oils, Saponification value, acid value, iodine number. Reversion and rancidity.

### UNIT V: Pharmaceutical Compounds: Structure and Importance (12 Lectures)

Classification, structure and therapeutic uses of antipyretics: Paracetamol (with synthesis), Analgesics: Ibuprofen (with synthesis), Antimalarials: Chloroquine (with synthesis). An elementary treatment of Antibiotics and detailed study of chloramphenicol, Medicinal values of curcumin (haldi), azadirachtin (neem), vitamin C and antacid (ranitidine).

## Practical: 60 LECTURES

1. Estimation of glycine by Sorenson's formalin method.
2. Study of the titration curve of glycine.
3. Estimation of proteins by Lowry's method.
4. Study of the action of salivary amylase on starch at optimum conditions.
5. Effect of temperature on the action of salivary amylase.
6. Saponification value of an oil or a fat.
7. Determination of Iodine number of an oil/ fat.
8. Isolation and characterization of DNA from onion/ cauliflower/peas.

### References Books:

1. Manual of Biochemistry Workshop, 2012, Department of Chemistry, University of Delhi.
2. Arthur, I. V. *Quantitative Organic Analysis*, Pearson.

## CHC 5.2: PHYSICAL CHEMISTRY V (Credits: Theory-04, Practicals-02)

### Theory: 60 Lectures

#### UNIT I: Quantum Chemistry (24 Lectures)

Postulates of quantum mechanics, quantum mechanical operators, Schrödinger equation and its application to free particle and “particle-in-a-box” (rigorous treatment), quantization of energy levels, zero-point energy and Heisenberg Uncertainty principle; wavefunctions, probability distribution functions, nodal properties, Extension to two and three dimensional boxes, separation of variables, degeneracy.

Qualitative treatment of simple harmonic oscillator model of vibrational motion: Setting up of Schrödinger equation and discussion of solution and wavefunctions. Vibrational energy of diatomic molecules and zero-point energy.

Angular momentum: Commutation rules, quantization of square of total angular momentum and z-component.

Rigid rotator model of rotation of diatomic molecule. Schrödinger equation, transformation to spherical polar coordinates. Separation of variables. Spherical harmonics. Discussion of solution.

Qualitative treatment of hydrogen atom and hydrogen-like ions: setting up of Schrödinger equation in spherical polar coordinates, radial part, quantization of energy (only final energy expression). Average and most probable distances of electron from nucleus.

Setting up of Schrödinger equation for many-electron atoms (He, Li). Need for approximation methods. Statement of variation theorem and application to simple systems (particle-in-a-box, harmonic oscillator, hydrogen atom).

Chemical bonding: Covalent bonding, valence bond and molecular orbital approaches, LCAO-MO treatment of  $H_2^+$ . Bonding and antibonding orbitals. Qualitative extension to  $H_2$ . Comparison of LCAO-MO and VB treatments of  $H_2$  (only wavefunctions, detailed solution not required) and their limitations. Refinements of the two approaches (Configuration Interaction for MO, ionic terms in VB). Qualitative description of LCAO-MO treatment of homonuclear and heteronuclear diatomic molecules (HF, LiH). Localised and non-localized molecular orbitals treatment of triatomic ( $BeH_2$ ,  $H_2O$ ) molecules. Qualitative MO theory and its application to  $AH_2$  type molecules.

#### UNIT III: Molecular Spectroscopy (24 Lectures)

Interaction of electromagnetic radiation with molecules and various types of spectra; Born-Oppenheimer approximation.

Rotation spectroscopy: Selection rules, intensities of spectral lines, determination of bond lengths of diatomic and linear triatomic molecules, isotopic substitution.

Vibrational spectroscopy: Classical equation of vibration, computation of force constant, amplitude of diatomic molecular vibrations, anharmonicity, Morse potential, dissociation energies, fundamental frequencies, overtones, hot bands, degrees of freedom for polyatomic molecules, modes of vibration, concept of group frequencies.

Vibration-rotation spectroscopy: diatomic vibrating rotator, P, Q, R branches.

Raman spectroscopy: Qualitative treatment of Rotational Raman effect; Effect of nuclear spin, Vibrational Raman spectra, Stokes and anti-Stokes lines; their intensity difference, rule of mutual exclusion.

Electronic spectroscopy: Franck-Condon principle, electronic transitions, singlet and triplet states, fluorescence and phosphorescence, dissociation and predissociation, calculation of electronic transitions of polyenes using free electron model.

Nuclear Magnetic Resonance (NMR) spectroscopy: Principles of NMR spectroscopy, Larmor precession, chemical shift and low resolution spectra, different scales, spin-spin coupling and high resolution spectra, interpretation of PMR spectra of organic molecules.

Electron Spin Resonance (ESR) spectroscopy: Its principle, hyperfine structure, ESR of simple radicals.



### UNIT III: Photochemistry (12 Lectures)

Characteristics of electromagnetic radiation, Lambert-Beer's law and its limitations, physical significance of absorption coefficients. Laws, of photochemistry, quantum yield, actinometry, examples of low and high quantum yields, photochemical equilibrium and the differential rate of photo-chemical reactions, photosensitised reactions, quenching. Role of photo-chemical reactions in biochemical processes, photostationary states, chemiluminescence.

#### Reference Books:

1. Banwell, C. N. & McCash, E. M. *Fundamentals of Molecular Spectroscopy* 4th Ed. Tata McGraw-Hill: New Delhi (2006).
2. Chandra, A. K. *Introductory Quantum Chemistry* Tata McGraw-Hill (2001).
3. House, J. E. *Fundamentals of Quantum Chemistry* 2nd Ed. Elsevier: USA (2004).
4. Kakkar, R. *Atomic & Molecular Spectroscopy: Concepts & Applications*, Cambridge University Press (2015).
5. Lowe, J. P. & Peterson, K. *Quantum Chemistry*, Academic Press (2005).

### Practical: 60 LECTURES

#### UV/Visible spectroscopy

1. Study the 200-500 nm absorbance spectra of  $\text{KMnO}_4$  and  $\text{K}_2\text{Cr}_2\text{O}_7$  (in 0.1 M  $\text{H}_2\text{SO}_4$ ) and determine the  $\lambda_{\text{max}}$  values. Calculate the energies of the two transitions in different units ( $\text{J molecule}^{-1}$ ,  $\text{kJ mol}^{-1}$ ,  $\text{cm}^{-1}$ , eV).
2. Study the pH-dependence of the UV-Vis spectrum (200-500 nm) of  $\text{K}_2\text{Cr}_2\text{O}_7$ .
3. Record the 200-350 nm UV spectra of the given compounds (acetone, acetaldehyde, 2-propanol, acetic acid) in water. Comment on the effect of structure on the UV spectra of organic compounds.

#### Colourimetry

1. Verify Lambert-Beer's law and determine the concentration of  $\text{CuSO}_4/\text{KMnO}_4/\text{K}_2\text{Cr}_2\text{O}_7$  in a solution of unknown concentration
2. Determine the concentrations of  $\text{KMnO}_4$  and  $\text{K}_2\text{Cr}_2\text{O}_7$  in a mixture.
3. Study the kinetics of iodination of propanone in acidic medium.
4. Determine the amount of iron present in a sample using 1,10-phenanthroline.
5. Determine the dissociation constant of an indicator (phenolphthalein).
6. Study the kinetics of interaction of crystal violet/ phenolphthalein with sodium hydroxide.
7. Analysis of the given vibration-rotation spectrum of  $\text{HCl}(\text{g})$

#### Reference Books:

1. Khosla, B. D.; Garg, V. C. & Gulati, A., *Senior Practical Physical Chemistry*, R. Chand & Co.: New Delhi (2011).
2. Garland, C. W.; Nibler, J. W. & Shoemaker, D. P. *Experiments in Physical Chemistry 8th Ed.*; McGraw-Hill: New York (2003).
3. Halpern, A. M. & McBane, G. C. *Experimental Physical Chemistry 3rd Ed.*; W.H. Freeman & Co.: New York (2003).

## CHC 6.1: INORGANIC CHEMISTRY-IV (Credits: Theory-04, Practicals-02) Theory: 60 Lectures

### UNIT I: Theoretical Principles in Qualitative Analysis (H<sub>2</sub>S Scheme) - (12 Lectures)

Basic principles involved in analysis of cations and anions and solubility products, common ion effect. Principles involved in separation of cations into groups and choice of group reagents. Interfering anions (fluoride, borate, oxalate and phosphate) and need to remove them after Group II.

### UNIT II: Organometallic Compounds I: (12 Lectures)

Definition and classification of organometallic compounds on the basis of bond type. Concept of hapticity of organic ligands. Metal carbonyls: 18 electron rule, electron count of mononuclear, polynuclear and substituted metal carbonyls of 3d series. General methods of preparation (direct combination, reductive carbonylation, thermal and photochemical decomposition) of mono and binuclear carbonyls of 3d series. Structures of mononuclear and binuclear carbonyls of Cr, Mn, Fe, Co and Ni using VBT.  $\pi$ -acceptor behaviour of CO (MO diagram of CO to be discussed).

### UNIT III: Organometallic Compounds II: (12 Lectures)

*Zeise's salt*: Preparation and structure, evidences of synergic effect and comparison of synergic effect with that in carbonyls.

*Metal Alkyls*: Important structural features of methyl lithium (tetramer) and trialkylaluminium (dimer), concept of multicentre bonding in these compounds. Role of triethylaluminium in polymerisation of ethene (Ziegler–Natta Catalyst). Species present in ether solution of Grignard reagent and their structures.

*Ferrocene*: Preparation and reactions (acetylation, alkylation, metallation, Mannich Condensation). Structure and aromaticity. Comparison of aromaticity and reactivity with that of benzene.

### UNIT IV: Reaction Kinetics and Mechanism: (12 Lectures)

Introduction to inorganic reaction mechanisms. Substitution reactions in square planar complexes, Trans- effect, theories of trans effect, Mechanism of nucleophilic substitution in square planar complexes, Thermodynamic and Kinetic stability, Kinetics of octahedral substitution, Ligand field effects and reaction rates, Mechanism of substitution in octahedral complexes.

### UNIT V: Catalysis by Organometallic Compounds: (12 Lectures)

Study of the following industrial processes and their mechanism:

1. Alkene hydrogenation (Wilkinson's Catalyst)
2. Hydroformylation (Co salts)
3. Wacker Process
4. Synthetic gasoline (Fischer Tropsch reaction)
5. Synthesis gas by metal carbonyl complexes

### Reference Books:

1. Svehla, G. *Vogel's Qualitative Inorganic Analysis*, 7th Edition, Prentice Hall, 1996.
2. Cotton, F.A.G.; Wilkinson & Gaus, P.L. *Basic Inorganic Chemistry 3rd Ed.*; Wiley India, Huheey, J. E.; Keiter, E.A. & Keiter, R.L. *Inorganic Chemistry, Principles of Structure and Reactivity 4th Ed.*, Harper Collins 1993, Pearson, 2006.
4. Sharpe, A.G. *Inorganic Chemistry*, 4th Indian Reprint (Pearson Education) 2005
5. Douglas, B. E.; McDaniel, D.H. & Alexander, J.J. *Concepts and Models in Inorganic Chemistry 3rd Ed.*, John Wiley and Sons, NY, 1994.

- Greenwood, N.N. & Earnshaw, A. *Chemistry of the Elements, Elsevier 2nd Ed*, 1997 (Ziegler Natta Catalyst and Equilibria in Grignard Solution).
- Lee, J.D. *Concise Inorganic Chemistry 5th Ed.*, John Wiley and sons 2008.
- Powell, P. *Principles of Organometallic Chemistry*, Chapman and Hall, 1988.
- Shriver, D.D. & P. Atkins, *Inorganic Chemistry 2nd Ed.*, Oxford University Press, 1994.
- Basolo, F. & Pearson, R. *Mechanisms of Inorganic Reactions: Study of Metal Complexes in Solution 2nd Ed.*, John Wiley & Sons Inc; NY.
- Purcell, K.F. & Kotz, J.C., *Inorganic Chemistry*, W.B. Saunders Co. 1977
- Miessler, G. L. & Tarr, D.A. *Inorganic Chemistry 4th Ed.*, Pearson, 2010.
- Collman, J. P. *et al. Principles and Applications of Organotr Chemistry*. Mill Valley, CA: University Science Books, 1987.

### Practical: 60 LECTURES

Qualitative semimicro analysis of mixtures containing 3 anions and 3 cations. Emphasis should be given to the understanding of the chemistry of different reactions. The following radicals are suggested:

$\text{CO}_3^{2-}$ ,  $\text{NO}_2^-$ ,  $\text{S}^{2-}$ ,  $\text{SO}_3^{2-}$ ,  $\text{S}_2\text{O}_3^{2-}$ ,  $\text{CH}_3\text{COO}^-$ ,  $\text{F}^-$ ,  $\text{Cl}^-$ ,  $\text{Br}^-$ ,  $\text{I}^-$ ,  $\text{NO}_3^-$ ,  $\text{BO}_3^{3-}$ ,  $\text{C}_2\text{O}_4^{2-}$ ,  $\text{PO}_4^{3-}$ ,  $\text{NH}_4^+$ ,  $\text{K}^+$ ,  $\text{Pb}^{2+}$ ,  $\text{Cu}^{2+}$ ,  $\text{Cd}^{2+}$ ,  $\text{Bi}^{3+}$ ,  $\text{Sn}^{2+}$ ,  $\text{Sb}^{3+}$ ,  $\text{Fe}^{3+}$ ,  $\text{Al}^{3+}$ ,  $\text{Cr}^{3+}$ ,  $\text{Zn}^{2+}$ ,  $\text{Mn}^{2+}$ ,  $\text{Co}^{2+}$ ,  $\text{Ni}^{2+}$ ,  $\text{Ba}^{2+}$ ,  $\text{Sr}^{2+}$ ,  $\text{Ca}^{2+}$ ,  $\text{Mg}^{2+}$ . Mixtures should preferably contain one interfering anion, **or** insoluble component ( $\text{BaSO}_4$ ,  $\text{SrSO}_4$ ,  $\text{PbSO}_4$ ,  $\text{CaF}_2$  or  $\text{Al}_2\text{O}_3$ ) **or** combination of anions e.g.  $\text{CO}_3^{2-}$  and  $\text{SO}_3^{2-}$ ,  $\text{NO}_2^-$  and  $\text{NO}_3^-$ ,  $\text{Cl}^-$  and  $\text{Br}^-$ ,  $\text{Cl}^-$  and  $\text{I}^-$ ,  $\text{Br}^-$  and  $\text{I}^-$ ,  $\text{NO}_3^-$  and  $\text{Br}^-$ ,  $\text{NO}_3^-$  and  $\text{I}^-$ . Spot tests should be done whenever possible.

- Measurement of 10 Dq by spectrophotometric method
- Verification of spectrochemical series.
- Controlled synthesis of two copper oxalate hydrate complexes: kinetic vs ther-modynamic factors.
- Preparation of acetylacetonato complexes of  $\text{Cu}^{2+}/\text{Fe}^{3+}$ . Find the  $\lambda_{\text{max}}$  of the complex.
- Synthesis of ammine complexes of Ni(II) and its ligand exchange reactions (e.g. bidentate ligands like acetylacetone, DMG, glycine) by substitution method.

#### Reference Books:

- Vogel's *Qualitative Inorganic Analysis*, Revised by G. Svehla. Pearson Education, 2002.
- Marr & Rockett *Practical Inorganic Chemistry*. John Wiley & Sons 1972.

## CHC 6.2: ORGANIC CHEMISTRY-V (Credits: Theory-04, Practicals-02)

### Theory: 60 Lectures

#### UNIT I: Organic Spectroscopy (24 Lectures)

*UV Spectroscopy*: Types of electronic transitions,  $\lambda_{\text{max}}$ , Chromophores and Auxochromes, Bathochromic and Hypsochromic shifts, Intensity of absorption; Application of Woodward Rules for calculation of  $\lambda_{\text{max}}$  for the following systems:  $\alpha,\beta$  unsaturated aldehydes, ketones, carboxylic acids and esters; Conjugated dienes: alicyclic, homoannular and heteroannular; Extended conjugated systems (aldehydes, ketones and dienes); distinction between cis and trans isomers.

*IR Spectroscopy*: Fundamental and non-fundamental molecular vibrations; IR absorption positions of O, N and S containing functional groups; Effect of H-bonding, conjugation, resonance and ring size on IR absorptions; Fingerprint region and its significance; application in functional group analysis.

*NMR Spectroscopy*: Basic principles of Proton Magnetic Resonance, chemical shift and factors influencing it; Spin – Spin coupling and coupling constant; Anisotropic effects in alkene, alkyne, aldehydes and aromatics, Interpretation of NMR spectra of simple compounds.

Applications of IR, UV and NMR for identification of simple organic molecules.

## UNIT II: Carbohydrates (16 Lectures)

Occurrence, classification and their biological importance.

Monosaccharides: Constitution and absolute configuration of glucose and fructose, epimers and anomers, mutarotation, determination of ring size of glucose and fructose, Haworth projections and conformational structures; Interconversions of aldoses and ketoses; Killiani-Fischer synthesis and Ruff degradation; Disaccharides – Structure elucidation of maltose, lactose and sucrose.

Polysaccharides – Elementary treatment of starch, cellulose and glycogen.

## UNIT III: Dyes (8 Lectures)

Classification, Colour and constitution; Mordant and Vat Dyes; Chemistry of dyeing; Synthesis and applications of: Azo dyes – Methyl Orange and Congo Red (mechanism of Diazo Coupling); Triphenyl Methane Dyes -Malachite Green, Rosaniline and Crystal Violet;

Phthalein Dyes – Phenolphthalein and Fluorescein; Natural dyes –structure elucidation and synthesis of Alizarin and Indigotin; Edible Dyes with examples.

## UNIT IV: Polymers (12 Lectures)

Introduction and classification including di-block, tri-block and amphiphilic polymers; Number average molecular weight, Weight average molecular weight, Degree of polymerization, Polydispersity Index.

Polymerisation reactions -Addition and condensation -Mechanism of cationic, anionic and free radical addition polymerization; Metallocene-based Ziegler-Natta polymerisation of alkenes; Preparation and applications of plastics – thermosetting (phenol-formaldehyde, Polyurethanes) and ther-mosoftening (PVC, polythene);

Fabrics – natural and synthetic (acrylic, polyamido, polyester); Rubbers – natural and synthetic: Buna-S, Chloroprene and Neoprene; Vulcanization; Polymer additives; Introduction to liquid crystal polymers; Biodegradable and conducting polymers with examples.

### Reference Books:

1. Kalsi, P. S. *Textbook of Organic Chemistry 1st Ed.*, New Age International (P) Ltd. Pub.
2. Morrison, R. T. & Boyd, R. N. *Organic Chemistry*, Dorling Kindersley (India) Pvt. Ltd. (Pearson Education).
3. Billmeyer, F. W. *Textbook of Polymer Science*, John Wiley & Sons, Inc.
4. Gowariker, V. R.; Viswanathan, N. V. & Sreedhar, J. *Polymer Science*, New Age International (P) Ltd. Pub.
5. Finar, I. L. *Organic Chemistry (Volume 2: Stereochemistry and the Chemistry of Natural Products)*, Dorling Kindersley (India) Pvt. Ltd. (Pearson Education).
6. Graham Solomons, T.W. *Organic Chemistry*, John Wiley & Sons, Inc.
7. McMurry, J.E. *Fundamentals of Organic Chemistry*, 7th Ed. Cengage Learning India Edition, 2013.
8. Clayden, J.; Greeves, N.; Warren, S.; Wothers, P.; *Organic Chemistry*, Oxford University Press.
9. Singh, J.; Ali, S.M. & Singh, J. *Natural Product Chemistry*, Prajati Prakashan (2010).
10. Kemp, W. *Organic Spectroscopy*, Palgrave.
11. Pavia, D. L. *et al. Introduction to Spectroscopy* 5th Ed. Cengage Learning India Ed. (2015).

## Practical: 60 LECTURES

1. Extraction of caffeine from tea leaves.
2. Preparation of sodium polyacrylate.
3. Preparation of urea formaldehyde.
4. Analysis of Carbohydrate: aldoses and ketoses, reducing and non-reducing sugars.
5. Qualitative analysis of unknown organic compounds containing monofunctional groups

(carbohydrates, aryl halides, aromatic hydrocarbons, nitro compounds, amines and amides) and simple bifunctional groups, for e.g. salicylic acid, cinnamic acid, nitrophenols, etc.

6. Identification of simple organic compounds by IR spectroscopy and NMR spectroscopy (Spectra to be provided).
7. Preparation of methyl orange.

**Reference Books:**

1. Vogel, A.I. *Quantitative Organic Analysis*, Part 3, Pearson (2012).
2. Mann, F.G. & Saunders, B.C. *Practical Organic Chemistry*, Pearson Education (2009)
3. Furniss, B.S.; Hannaford, A.J.; Smith, P.W.G.; Tatchell, A.R. *Practical Organic Chemistry*, 5th Ed., Pearson (2012)
4. Ahluwalia, V.K. & Aggarwal, R. *Comprehensive Practical Organic Chemistry: Preparation and Quantitative Analysis*, University Press (2000).
5. Ahluwalia, V.K. & Dhingra, S. *Comprehensive Practical Organic Chemistry: Qualitative Analysis*, University Press (2000).

## DISCIPLINE SPECIFIC ELECTIVE

### CHD 5.3: ANALYTICAL METHODS IN CHEMISTRY (Credits: Theory-04, Practicals-02)

#### Theory: 60 Lectures

#### UNIT I: Qualitative and quantitative aspects of analysis (5 Lectures)

Sampling, evaluation of analytical data, errors, accuracy and precision, methods of their expression, normal law of distribution if indeterminate errors, statistical test of data; F, Q and t test, rejection of data, and confidence intervals.

#### UNIT II: Optical methods of analysis (25 Lectures)

Origin of spectra, interaction of radiation with matter, fundamental laws of spectroscopy and selection rules, validity of Beer-Lambert's law.

*UV-Visible Spectrometry:* Basic principles of instrumentation (choice of source, monochromator and detector) for single and double beam instrument.

*Basic principles of quantitative analysis:* estimation of metal ions from aqueous solution, geometrical isomers, keto-enol tautomers. Determination of composition of metal complexes using Job's method of continuous variation and mole ratio method.

*Infrared Spectrometry:* Basic principles of instrumentation (choice of source, monochromator & detector) for single and double beam instrument; sampling techniques.

Structural illustration through interpretation of data, Effect and importance of isotope substitution.

*Flame Atomic Absorption and Emission Spectrometry:* Basic principles of instrumentation (choice of source, monochromator, detector, choice of flame and Burner designs. Techniques of atomization and sample introduction; Method of background correction, sources of chemical interferences and their method of removal. Techniques for the quantitative estimation of trace level of metal ions from water samples.

#### UNIT III: Thermal methods of analysis: (5 Lectures)

Theory of thermogravimetry (TG), basic principle of instrumentation.

Techniques for quantitative estimation of Ca and Mg from their mixture.

#### UNIT IV: Electroanalytical methods (10 Lectures)

Classification of electroanalytical methods, basic principle of pH metric, potentiometric and conductometric titrations. Techniques used for the determination of equivalence points.

Techniques used for the determination of pK<sub>a</sub> values.

#### UNIT V: Separation techniques (15 Lectures)

Solvent extraction: Classification, principle and efficiency of the technique.

Mechanism of extraction: extraction by solvation and chelation.

Technique of extraction: batch, continuous and counter current extractions.

Qualitative and quantitative aspects of solvent extraction: extraction of metal ions from aqueous solution, extraction of organic species from the aqueous and nonaqueous media.

Chromatography: Classification, principle and efficiency of the technique.

Mechanism of separation: adsorption, partition & ion exchange.

Development of chromatograms: frontal, elution and displacement methods.

Qualitative and quantitative aspects of chromatographic methods of analysis: IC, GLC, GPC, TLC and HPLC.

Stereoisomeric separation and analysis: Measurement of optical rotation, calculation of Enantiomeric excess (ee)/ diastereomeric excess (de) ratios and determination of enantiomeric composition using NMR, Chiral solvents and chiral shift reagents. Chiral chromatographic techniques using chiral columns (GC and HPLC).

Role of computers in instrumental methods of analysis.

### Reference Books:

1. Mendham, J., *A. I. Vogel's Quantitative Chemical Analysis 6th Ed.*, Pearson, 2009.
2. Willard, H.H. *et al.: Instrumental Methods of Analysis*, 7th Ed. Wardsworth Publishing Company, Belmont, California, USA, 1988.
3. Christian, G.D. *Analytical Chemistry*, 6th Ed. John Wiley & Sons, New York, 2004.
4. Harris, D.C.: *Exploring Chemical Analysis*, 9th Ed. New York, W.H. Freeman, 2016.
5. Khopkar, S.M. *Basic Concepts of Analytical Chemistry*. New Age International Publisher, 2009.
6. Skoog, D.A. Holler F.J. & Nieman, T.A. *Principles of Instrumental Analysis*, Cengage Learning India Ed.
7. Mikes, O. *Laboratory Hand Book of Chromatographic & Allied Methods*, Elles Harwood Series on Analytical Chemistry, John Wiley & Sons, 1979.
8. Ditts, R.V. *Analytical Chemistry; Methods of separation*, van Nostrand, 1974.

## Practical: 60 Lectures

### I. Separation Techniques

- (a) Separation of mixtures
  - (i) Paper chromatographic separation of  $\text{Fe}^{3+}$ ,  $\text{Al}^{3+}$ , and  $\text{Cr}^{3+}$ .
  - (ii) Separation and identification of the monosaccharides present in the given mixture (glucose & fructose) by paper chromatography. Reporting the  $R_f$  values.
- (b) Separate a mixture of Sudan yellow and Sudan Red by TLC technique and identify them on the basis of their  $R_f$  values.
- (c) Chromatographic separation of the active ingredients of plants, flowers and juices by TLC

### II. Solvent Extractions:

- (i) To separate a mixture of  $\text{Ni}^{2+}$  &  $\text{Fe}^{2+}$  by complexation with DMG and extracting the  $\text{Ni}^{2+}$  - DMG complex in chloroform, and determine its concentration by spectrophotometry.
- (ii) Solvent extraction of zirconium with amberliti LA-1, separation from a mixture of irons and gallium.

III. Determine the pH of the given aerated drinks fruit juices, shampoos and soaps.

IV. Determination of Na, Ca, Li in cola drinks and fruit juices using flame photometric techniques.

V. Analysis of soil:

- (i) Determination of pH of soil.
- (ii) Total soluble salt
- (iii) Estimation of calcium, magnesium, phosphate, nitrate

VI. Ion exchange:

- (i) Determination of exchange capacity of cation exchange resins and anion exchange resins.
- (ii) Separation of metal ions from their binary mixture.
- (iii) Separation of amino acids from organic acids by ion exchange chromatography.

### VII. Spectrophotometry:

1. Determination of pKa values of indicator using spectrophotometry.
2. Structural characterization of compounds by infrared spectroscopy.
3. Determination of dissolved oxygen in water.
4. Determination of chemical oxygen demand (COD).
5. Determination of Biological oxygen demand (BOD).
6. Determine the composition of the Ferric-salicylate/ ferric-thiocyanate complex by Job's method.

### **Reference Books:**

1. Mendham, J., *A. I. Vogel's Quantitative Chemical Analysis 6th Ed.*, Pearson, 2009.
2. Willard, H.H. *et al.: Instrumental Methods of Analysis*, 7th Ed. Wardsworth Publishing Company, Belmont, California, USA, 1988.
3. Christian, G.D. *Analytical Chemistry*, 6th Ed. John Wiley & Sons, New York, 2004.
4. Harris, D.C. *Exploring Chemical Analysis*, 9th Ed. New York, W.H. Freeman, 2016.
5. Khopkar, S.M. *Basic Concepts of Analytical Chemistry*. New Age International Publisher, 2009.
6. Skoog, D.A. Holler F.J. and Nieman, T.A. *Principles of Instrumental Analysis*, Cengage Learning India Edition.
7. Mikes, O. & Chalmes, R.A. *Laboratory Handbook of Chromatographic & Allied Methods*, Elles Harwood Ltd. London.
8. Ditts, R.V. *Analytical Chemistry: Methods of separation*. Van Nostrand, New York, 1974.

## **CHD 5.4: RESEARCH METHODOLOGY FOR CHEMISTRY (Credits: Theory-05, Tutorial-01)**

### **Theory: 75 Lectures**

#### **Literature Survey: (20 Lectures)**

**Print:** Sources of information: Primary, secondary, tertiary sources; Journals: Journal abbreviations, abstracts, current titles, reviews, monographs, dictionaries, text-books, current contents, Introduction to Chemical Abstracts and Beilstein, Subject Index, Substance Index, Author Index, Formula Index, and other Indices with examples.

**Digital:** Web resources, E-journals, Journal access, TOC alerts, Hot articles, Citation index, Impact factor, H-index, E-consortium, UGC infonet, E-books, Internet discussion groups and communities, Blogs, Preprint servers, Search engines, Scirus, Google Scholar, ChemIndustry, Wiki- Data-bases, ChemSpider, Science Direct, SciFinder, Scopus.

**Information Technology and Library Resources:** The Internet and World Wide Web. Internet resources for chemistry. Finding and citing published information.

#### **Methods of Scientific Research and Writing Scientific Papers: (20 Lectures)**

Reporting practical and project work. Writing literature surveys and reviews. Organizing a poster display. Giving an oral presentation.

Writing scientific papers – justification for scientific contributions, bibliography, description of methods, conclusions, the need for illustration, style, publications of scientific work. Writing ethics. Avoiding plagiarism.

#### **Chemical Safety and Ethical Handling of Chemicals: (12 Lectures)**

Safe working procedure and protective environment, protective apparel, emergency procedure and first aid, laboratory ventilation. Safe storage and use of hazardous chemicals, procedure for working with substances that pose hazards, flammable or explosive hazards, procedures for working with gases at pressures above or below atmospheric – safe storage and disposal of waste chemicals, recovery, recycling and reuse of laboratory chemicals, procedure for laboratory disposal of explosives, identification, verification and segregation of laboratory waste, disposal of chemicals in the sanitary sewer system, incineration and transportation of hazardous chemicals.

#### **Data Analysis: (13 Lectures)**

*The Investigative Approach*

*Analysis and Presentation of Data:* Descriptive statistics. Choosing and using statistical tests. Chemom-



etrics. Analysis of variance (ANOVA), Correlation and regression, Curve fitting, fitting of linear equations, simple linear cases, weighted linear case, analysis of residuals, General polynomial fitting, linearizing transformations, exponential function fit,  $r$  and its abuse. Basic aspects of multiple linear regression analysis.

### **Electronics: (10 Lectures)**

Basic fundamentals of electronic circuits and their components used in circuits of common instruments like spectrophotometers, typical circuits involving operational amplifiers for electrochemical instruments. Elementary aspects of digital electronics.

### **Reference Books:**

1. Dean, J. R., Jones, A. M., Holmes, D., Reed, R., Weyers, J. & Jones, A. (2011) *Practical skills in chemistry*. 2nd Ed. Prentice-Hall, Harlow.
2. Hibbert, D. B. & Gooding, J. J. (2006) *Data analysis for chemistry*. Oxford University Press.
3. Topping, J. (1984) *Errors of observation and their treatment*. Fourth Ed., Chapman Hall, London.
4. Harris, D. C. *Quantitative chemical analysis*. 6th Ed., Freeman (2007) Chapters 3-5.
5. Levie, R. de, *How to use Excel in analytical chemistry and in general scientific data analysis*. Cambridge Univ. Press (2001) 487 pages.
6. Chemical safety matters – IUPAC – IPCS, Cambridge University Press, 1992.
7. OSU safety manual 1.01.

## **CHD 6.3: GREEN CHEMISTRY (Credits: Theory-04, Practicals-02)**

### **Theory: 60 Lectures**

#### **UNIT I: Introduction to Green Chemistry (4 Lectures)**

What is Green Chemistry? Need for Green Chemistry. Goals of Green Chemistry. Limitations/Obstacles in the pursuit of the goals of Green Chemistry

#### **UNIT II: Principles of Green Chemistry and Designing a Chemical synthesis (30 Lectures)**

Twelve principles of Green Chemistry with their explanations and examples and special emphasis on the following:

- Designing a Green Synthesis using these principles; Prevention of Waste/ byproducts; maximum incorporation of the materials used in the process into the final products, Atom Economy, calculation of atom economy of the rearrangement, addition, substitution and elimination reactions.
- Prevention/ minimization of hazardous/ toxic products reducing toxicity.  
 $\text{risk} = (\text{function}) \text{hazard} \times \text{exposure}$ ; waste or pollution prevention hierarchy.
- Green solvents– supercritical fluids, water as a solvent for organic reactions, ionic liquids, fluor-ous biphasic solvent, PEG, solventless processes, immobilized solvents and how to compare greenness of solvents.
- Energy requirements for reactions – alternative sources of energy: use of microwaves and ultra-sonic energy.
- Selection of starting materials; avoidance of unnecessary derivatization – careful use of blocking/protecting groups.
- Use of catalytic reagents (wherever possible) in preference to stoichiometric reagents; catalysis and green chemistry, comparison of heterogeneous and homogeneous catalysis, biocatalysis, asymmetric catalysis and photocatalysis.
- Prevention of chemical accidents designing greener processes, inherent safer design, principle of ISD —What you don't have cannot harm you, greener alternative to Bhopal Gas Tragedy (safer route to

carcarbaryl) and Flixiborough accident (safer route to cyclohexanol) subdivision of ISD, minimization, simplification, substitution, moderation and limitation.

- Strengthening/ development of analytical techniques to prevent and minimize the generation of hazardous substances in chemical processes.

### UNIT III: Examples of Green Synthesis/ Reactions and some real world cases (16 Lectures)

1. Green Synthesis of the following compounds: adipic acid, catechol, disodium iminodiacetate (alternative to Strecker synthesis)
2. Microwave assisted reactions in water: Hofmann Elimination, methyl benzoate to benzoic acid, oxidation of toluene and alcohols; microwave assisted reactions in organic solvents Di-els-Alder reaction and Decarboxylation reaction
3. Ultrasound assisted reactions: sonochemical Simmons-Smith Reaction (Ultrasonic alternative to Iodine)
4. Surfactants for carbon dioxide – replacing smog producing and ozone depleting solvents with CO<sub>2</sub> for precision cleaning and dry cleaning of garments.
5. Designing of Environmentally safe marine antifoulant.
6. Rightfit pigment: synthetic azopigments to replace toxic organic and inorganic pigments.
7. An efficient, green synthesis of a compostable and widely applicable plastic (poly lactic acid) made from corn.
8. Healthier Fats and oil by Green Chemistry: Enzymatic Inter esterification for production of no Trans-Fats and Oils
9. Development of Fully Recyclable Carpet: Cradle to Cradle Carpeting

### UNIT IV: Future Trends in Green Chemistry (10 Lectures)

Oxidation reagents and catalysts; Biomimetic, multifunctional reagents; Combinatorial green chemistry; Proliferation of solventless reactions; co crystal controlled solid state synthesis (C<sup>2</sup>S<sup>3</sup>); Green chemistry in sustainable development.

#### Reference Books:

1. Ahluwalia, V.K. & Kidwai, M.R. *New Trends in Green Chemistry*, Anamalaya Publishers (2005).
2. Anastas, P.T. & Warner, J.K.: *Green Chemistry - Theory and Practical*, Oxford University Press (1998).
3. Matlack, A.S. *Introduction to Green Chemistry*, Marcel Dekker (2001).
4. Cann, M.C. & Connely, M.E. *Real-World cases in Green Chemistry*, American Chemical Society, Washington (2000).
5. Ryan, M.A. & Tinnesand, M. *Introduction to Green Chemistry*, American Chemical Society, Washington (2002).
6. Lancaster, M. *Green Chemistry: An Introductory Text* RSC Publishing, 2nd Edition, 2010.

### Practical: 60 Lectures

1. **Safer starting materials**  
Preparation and characterization of nanoparticles of gold using tea leaves.
2. **Using renewable resources**  
Preparation of biodiesel from vegetable/ waste cooking oil.
3. **Avoiding waste**  
Principle of atom economy.
  - a. Use of molecular model kit to stimulate the reaction to investigate how the atom economy can

illustrate Green Chemistry.

- b. Preparation of propene by two methods can be studied
- (I) Triethylamine ion + OH<sup>-</sup> → propene + trimethylpropene + water
- (II) 1-propanol propene + water

Other types of reactions, like addition, elimination, substitution and rearrangement should also be studied for the calculation of atom economy.

#### 4. Use of enzymes as catalysts

- 1) Benzoin condensation using Thiamine Hydrochloride as a catalyst instead of cyanide.

#### 5. Alternative Green solvents

Extraction of D-limonene from orange peel using liquid CO<sub>2</sub> prepared from dry ice. Mechanochemical solvent free synthesis of azomethines

#### 6. Alternative sources of energy

- a. Solvent free, microwave assisted one pot synthesis of phthalocyanine complex of copper (II).
- b. Photoreduction of benzophenone to benzopinacol in the presence of sunlight.

#### Reference Books:

1. Anastas, P.T & Warner, J.C. *Green Chemistry: Theory and Practice*, Oxford University Press (1998).
2. Kirchoff, M. & Ryan, M.A. *Greener approaches to undergraduate chemistry experiment*. American Chemical Society, Washington DC (2002).
3. Ryan, M.A. *Introduction to Green Chemistry*, Tinneland; (Ed), American Chemical Society, Washington DC (2002).
4. Sharma, R.K.; Sidhwani, I.T. & Chaudhari, M.K. I.K. *Green Chemistry Experiment: A monograph International Publishing House Pvt Ltd. New Delhi*. Bangalore ISBN 978-93-81141-55-7 (2013).
5. Cann, M.C. & Connelly, M. E. *Real world cases in Green Chemistry*, American Chemical Society (2008).
6. Cann, M. C. & Thomas, P. *Real world cases in Green Chemistry*, American Chemical Society (2008).
7. Lancaster, M. *Green Chemistry: An Introductory Text* RSC Publishing, 2nd Edition, 2010.
8. Pavia, D.L., Lampman, G.M., Kriz, G.S. & Engel, R.G. *Introduction to Organic Laboratory Techniques: A Microscale and Macro Scale Approach*, W.B.Saunders, 1995.

### CHD 6.4: PROJECT/DISSERTATION (Credits: 6)

The student has to choose their guide during their 5th Semester.

The department will set up committee to finalise the proposed Project/Dissertation.

There will be viva voce at the end of 6th semester.

## GENERIC ELECTIVE COURSE

### CHG 1.4: Inorganic - I and Organic- I (Credits: Theory-04, Practicals-02) Theory: 60 Lectures

#### Section A: Inorganic Chemistry-1 (30 Periods)

##### Atomic Structure (14 Lectures):

*Review of: Bohr's theory and its limitations, dual behaviour of matter and radiation, de Broglie's relation, Heisenberg Uncertainty principle. Hydrogen atom spectra. Need of a new approach to Atomic structure.*

What is Quantum mechanics? Time independent Schrodinger equation and meaning of various terms in it. Significance of  $\psi$  and  $\psi^2$ , Schrödinger equation for hydrogen atom.

Radial and angular parts of the hydrogenic wavefunctions (atomic orbitals) and their variations for  $1s$ ,  $2s$ ,  $2p$ ,  $3s$ ,  $3p$  and  $3d$  orbitals (Only graphical representation). Radial and angular nodes and their significance. Radial distribution functions and the concept of the most probable distance with special reference to  $1s$  and  $2s$  atomic orbitals. Significance of quantum numbers, orbital angular momentum and quantum numbers  $ml$  and  $ms$ . Shapes of  $s$ ,  $p$  and  $d$  atomic orbitals, nodal planes. Discovery of spin, spin quantum number ( $s$ ) and magnetic spin quantum number ( $ms$ ).

Rules for filling electrons in various orbitals, Electronic configurations of the atoms. Stability of half-filled and completely filled orbitals, concept of exchange energy. Relative energies of atomic orbitals, Anomalous electronic configurations.

##### Chemical Bonding and Molecular Structure (16 Lectures):

*Ionic Bonding:* General characteristics of ionic bonding. Energy considerations in ionic bonding, lattice energy and solvation energy and their importance in the context of stability and solubility of ionic compounds. Statement of Born-Landé equation for calculation of lattice energy, Born-Haber cycle and its applications, polarizing power and polarizability.

Fajan's rules, ionic character in covalent compounds, bond moment, dipole moment and percentage ionic character.

*Covalent bonding:* VB Approach: Shapes of some inorganic molecules and ions on the basis of VSEPR and hybridization with suitable examples of linear, trigonal planar, square planar, tetrahedral, trigonal bipyramidal and octahedral arrangements.

Concept of resonance and resonating structures in various inorganic and organic compounds.

MO Approach: Rules for the LCAO method, bonding and antibonding MOs and their characteristics for  $s-s$ ,  $s-p$  and  $p-p$  combinations of atomic orbitals, nonbonding combination

of orbitals, MO treatment of homonuclear diatomic molecules of 1st and 2nd periods (including idea of  $s-p$  mixing) and heteronuclear diatomic molecules such as CO, NO and NO<sup>+</sup>. Comparison of VB and MO approaches.

#### Section B: Organic Chemistry-1 (30 Periods)

##### Fundamentals of Organic Chemistry (8 Lectures)

Physical Effects, Electronic Displacements: Inductive Effect, Electromeric Effect, Resonance and Hyperconjugation. Cleavage of Bonds: Homolysis and Heterolysis.

Structure, shape and reactivity of organic molecules: Nucleophiles and electrophiles.

Reactive Intermediates: Carbocations, Carbanions and free radicals.

Strength of organic acids and bases: Comparative study with emphasis on factors affecting pK values. Aromaticity: Benzenoids and Hückel's rule.

##### Stereochemistry (10 Lectures)

Conformations with respect to ethane, butane and cyclohexane. Interconversion of Wedge Formula, Newmann, Sawhorse and Fischer representations. Concept of chirality (upto two carbon atoms). Configuration: Geometrical and Optical isomerism; Enantiomerism, Diastereomerism and Meso

compounds). Threo and erythro; D and L; *cis – trans* nomenclature; CIP Rules: R/ S (for upto 2 chiral carbon atoms) and E / Z Nomenclature (for upto two C=C systems).

### Aliphatic Hydrocarbons (12 Lectures)

Functional group approach for the following reactions (preparations & reactions) to be studied in context to their structure.

**Alkanes:** (Upto 5 Carbons). *Preparation:* Catalytic hydrogenation, Wurtz reaction, Kolbe's synthesis, from Grignard reagent. *Reactions:* Free radical Substitution: Halogenation.

**Alkenes:** (Upto 5 Carbons) *Preparation:* Elimination reactions: Dehydration of alkenes and dehydrohalogenation of alkyl halides (Saytzeff's rule); *cis* alkenes (Partial catalytic hydrogenation) and *trans* alkenes (Birch reduction). *Reactions:* *cis*-addition (alk.  $\text{KMnO}_4$ ) and *trans*-addition (bromine), Addition of HX (Markownikoff's and anti-Markownikoff's addition), Hydration, Ozo-nolysis, oxymercuration-demercuration, Hydroboration-oxidation.

**Alkynes:** (Upto 5 Carbons) *Preparation:* Acetylene from  $\text{CaC}_2$  and conversion into higher alkynes; by dehalogenation of tetra halides and dehydrohalogenation of vicinal-dihalides.

*Reactions:* formation of metal acetylides, addition of bromine and alkaline  $\text{KMnO}_4$ , ozonolysis and oxidation with hot alk.  $\text{KMnO}_4$ .

### Reference Books:

1. Lee, J.D. *Concise Inorganic Chemistry* ELBS, 1991.
2. Cotton, F.A., Wilkinson, G. & Gaus, P.L. *Basic Inorganic Chemistry*, 3rd ed., Wiley.
3. Douglas, B.E., McDaniel, D.H. & Alexander, J.J. *Concepts and Models in Inorganic Chemistry*, John Wiley & Sons.
4. Huheey, J.E., Keiter, E.A., Keiter, R.L. & Medhi, O.K. *Inorganic Chemistry: Principles of Structure and Reactivity*, Pearson Education India, 2006.
5. Graham Solomon, T.W., Fryhle, C.B. & Snyder, S.A. *Organic Chemistry*, John Wiley & Sons (2014).
6. McMurry, J.E. *Fundamentals of Organic Chemistry*, 7th Ed. Cengage Learning India Edition, 2013.
7. Sykes, P. *A Guidebook to Mechanism in Organic Chemistry*, Orient Longman, New Delhi (1988).
8. Eliel, E.L. *Stereochemistry of Carbon Compounds*, Tata McGraw Hill education, 2000.
9. Finar, I.L. *Organic Chemistry* (Vol. I & II), E.L.B.S.
10. Morrison, R.T. & Boyd, R.N. *Organic Chemistry*, Pearson, 2010.
11. Bahl, A. & Bahl, B.S. *Advanced Organic Chemistry*, S. Chand, 2010.

## Practical: 60 Lectures

### Section A: Inorganic Chemistry - Volumetric Analysis

1. Estimation of sodium carbonate and sodium hydrogen carbonate present in a mixture.
2. Estimation of oxalic acid by titrating it with  $\text{KMnO}_4$ .
3. Estimation of water of crystallization in Mohr's salt by titrating with  $\text{KMnO}_4$ .
4. Estimation of Fe (II) ions by titrating it with  $\text{K}_2\text{Cr}_2\text{O}_7$  using internal indicator.
5. Estimation of Cu (II) ions iodometrically using  $\text{Na}_2\text{S}_2\text{O}_3$ .

### Section B: Organic Chemistry

1. Detection of extra elements (N, S, Cl, Br, I) in organic compounds (containing upto two extra elements)
2. Separation of mixtures by Chromatography: Measure the  $R_f$  value in each case (combination of two compounds to be given)

- (a) Identify and separate the components of a given mixture of two amino acids (glycine, aspartic acid, glutamic acid, tyrosine or any other amino acid) by paper chromatography
- (b) Identify and separate the sugars present in the given mixture by paper chromatography.

**Reference Books:**

1. Svehla, G. *Vogel's Qualitative Inorganic Analysis*, Pearson Education, 2012.
2. Mendham, J. *Vogel's Quantitative Chemical Analysis*, Pearson, 2009.
3. Vogel, A.I., Tatchell, A.R., Furnis, B.S., Hannaford, A.J. & Smith, P.W.G., *Textbook of Practical Organic Chemistry*, Prentice-Hall, 5th edition, 1996.
4. Mann, F.G. & Saunders, B.C. *Practical Organic Chemistry* Orient-Longman, 1960.

**CHG 2.4: Physical - I and Organic - II (Credits: Theory-04, Practicals-02)**  
**Theory: 60 Lectures**

**Section A: Physical Chemistry-1 (30 Lectures)**

**Chemical Energetics (10 Lectures):**

Review of thermodynamics and the Laws of Thermodynamics.

Important principles and definitions of thermochemistry. Concept of standard state and standard enthalpies of formations, integral and differential enthalpies of solution and dilution. Calculation of bond energy, bond dissociation energy and resonance energy from thermochemical data. Variation of enthalpy of a reaction with temperature – Kirchhoff's equation.

Statement of Third Law of thermodynamics and calculation of absolute entropies of substances.

**Chemical Equilibrium: (8 Lectures)**

Free energy change in a chemical reaction. Thermodynamic derivation of the law of chemical equilibrium. Distinction between  $\Delta G$  and  $\Delta G^\circ$ , Le Chatelier's principle. Relationships between  $K_p$ ,  $K_c$  and  $K_x$  for reactions involving ideal gases.

**Ionic Equilibria: (12 Lectures)**

Strong, moderate and weak electrolytes, degree of ionization, factors affecting degree of ionization, ionization constant and ionic product of water. Ionization of weak acids and bases, pH scale, common ion effect. Salt hydrolysis-calculation of hydrolysis constant, degree of hydrolysis and pH for different salts. Buffer solutions. Solubility and solubility product of sparingly soluble salts – applications of solubility product principle.

**Section B: Organic Chemistry-2 (30 Lectures)**

Functional group approach for the following reactions (preparations & reactions) to be studied in context to their structure.

**Aromatic hydrocarbons (8 Lectures):**

*Preparation* (Case benzene): from phenol, by decarboxylation, from acetylene, from benzene sulphonic acid.

*Reactions:* (Case benzene): Electrophilic substitution: nitration, halogenation and sulphonation. Friedel-Craft's reaction (alkylation and acylation) (upto 4 carbons on benzene). Side chain oxidation of alkyl benzenes (upto 4 carbons on benzene).

**Alkyl and Aryl Halides (8 Lectures):**

**Alkyl Halides** (Upto 5 Carbons) Types of Nucleophilic Substitution ( $S_N1$ ,  $S_N2$  and  $S_Ni$ ) reactions.

*Preparation:* from alkenes and alcohols.

*Reactions:* hydrolysis, nitrite & nitro formation, nitrile & isonitrile formation. Williamson's ether synthesis: Elimination vs substitution.

**Aryl Halides Preparation:** (Chloro, bromo and iodo-benzene case): from phenol, Sandmeyer & Gattermann reactions.

*Reactions (Chlorobenzene):* Aromatic nucleophilic substitution (replacement by –OH group) and effect of nitro substituent. Benzyne Mechanism:  $\text{KNH}_2/\text{NH}_3$  (or  $\text{NaNH}_2/\text{NH}_3$ ).

Reactivity and Relative strength of C-Halogen bond in alkyl, allyl, benzyl, vinyl and aryl halides.

### **Alcohols, Phenols and Ethers (Upto 5 Carbons): (14 Lectures)**

**Alcohols: Preparation:** Preparation of 1°, 2° and 3° alcohols: using Grignard reagent, Ester hydrolysis, Reduction of aldehydes, ketones, carboxylic acid and esters.

*Reactions:* With sodium, HX (Lucas test), esterification, oxidation (with PCC, alk.  $\text{KMnO}_4$ , acidic dichromate, conc.  $\text{HNO}_3$ ). Oppeneauer oxidation *Diols:* (Upto 6 Carbons) oxidation of diols. Pinacol-Pinacolone rearrangement.

**Phenols:** (Phenol case) *Preparation:* Cumene hydroperoxide method, from diazonium salts.

*Reactions:* Electrophilic substitution: Nitration, halogenation and sulphonation. Reimer Tiemann Reaction, Gattermann-Koch Reaction, Houben–Hoesch Condensation, Schotten–Baumann Reaction.

**Ethers (aliphatic and aromatic):** Cleavage of ethers with HI.

**Aldehydes and ketones (aliphatic and aromatic):** (Formaldehyde, acetaldehyde, acetone and benzaldehyde)

*Preparation:* from acid chlorides and from nitriles.

*Reactions* – Reaction with HCN, ROH,  $\text{NaHSO}_3$ ,  $\text{NH}_2$ -G derivatives. Iodoform test. Aldol Condensation, Cannizzaro's reaction, Wittig reaction, Benzoin condensation. Clemensen reduction and Wolff Kishner reduction. Meerwein-Ponndorf Verley reduction.

### **Reference Books:**

1. Graham Solomon, T.W., Fryhle, C.B. & Snyder, S.A. *Organic Chemistry*, John Wiley & Sons (2014).
2. McMurry, J.E. *Fundamentals of Organic Chemistry*, 7th Ed. Cengage Learning India Edition, 2013.
3. Sykes, P. *A Guidebook to Mechanism in Organic Chemistry*, Orient Longman, New Delhi (1988).
4. Finar, I.L. *Organic Chemistry* (Vol. I & II), E.L.B.S.
5. Morrison, R.T. & Boyd, R.N. *Organic Chemistry*, Pearson, 2010.
6. Bahl, A. & Bahl, B.S. *Advanced Organic Chemistry*, S. Chand, 2010.
7. Barrow, G.M. *Physical Chemistry* Tata McGraw-Hill (2007).
8. Castellan, G.W. *Physical Chemistry* 4th Ed. Narosa (2004).
9. Kotz, J.C., Treichel, P.M. & Townsend, J.R. *General Chemistry* Cengage Learning India Pvt. Ltd., New Delhi (2009).
10. Mahan, B.H. *University Chemistry* 3rd Ed. Narosa (1998).
11. Petrucci, R.H. *General Chemistry* 5th Ed. Macmillan Publishing Co.: New York (1985).

## **Practical: 60 Lectures**

### **Section A: Physical Chemistry**

#### **Thermochemistry:**

1. Determination of heat capacity of calorimeter for different volumes.
2. Determination of enthalpy of neutralization of hydrochloric acid with sodium hydroxide.
3. Determination of enthalpy of ionization of acetic acid.
4. Determination of integral enthalpy of solution of salts ( $\text{KNO}_3$ ,  $\text{NH}_4\text{Cl}$ ).
5. Determination of enthalpy of hydration of copper sulphate.
6. Study of the solubility of benzoic acid in water and determination of  $\Delta H$ .

### **Ionic equilibria:**

pH measurements-

Measurement of pH of different solutions like aerated drinks, fruit juices, shampoos and soaps (use dilute solutions of soaps and shampoos to prevent damage to the glass electrode) using pH-meter.

a) Preparation of buffer solutions:

(i) Sodium acetate-acetic acid

(ii) Ammonium chloride-ammonium hydroxide

Measurement of the pH of buffer solutions and comparison of the values with theoretical values.

### **Section B: Organic Chemistry**

1. Purification of organic compounds by crystallization (from water and alcohol) and distillation.

2. Criteria of Purity: Determination of melting and boiling points.

3. Preparations: Mechanism of various reactions involved to be discussed.

Recrystallisation, determination of melting point and calculation of quantitative yields to be done.

(a) Bromination of Phenol/Aniline

(b) Benzoylation of amines/phenols

(c) Oxime and 2,4-dinitrophenylhydrazone of aldehyde/ketone

### **Reference Books:**

1. Vogel, A.I., Tatchell, A.R., Furnis, B.S., Hannaford, A.J. & Smith, P.W.G., *Textbook of Practical Organic Chemistry*, Prentice-Hall, 5th edition, 1996.

2. Mann, F.G. & Saunders, B.C. *Practical Organic Chemistry* Orient-Longman, 1960.

3. Khosla, B. D.; Garg, V. C. & Gulati, A. *Senior Practical Physical Chemistry*, R. Chand & Co.: New Delhi (2011).

## **CHG 3.5: Physical - II and Organic - III (Credits: Theory-04, Practicals-02) Theory: 60 Lectures**

### **Section A: Physical Chemistry-2 (30 Lectures)**

#### **Solutions: (8 Lectures)**

Thermodynamics of ideal solutions: Ideal solutions and Raoult's law, deviations from Raoult's law – non-ideal solutions. Vapour pressure-composition and temperature composition curves of ideal and non-ideal solutions. Distillation of solutions. Lever rule.

Azeotropes.

Partial miscibility of liquids: Critical solution temperature; effect of impurity on partial miscibility of liquids. Immiscibility of liquids- Principle of steam distillation. Nernst distribution law and its applications, solvent extraction.

#### **Phase Equilibria: (8 Lectures)**

Phases, components and degrees of freedom of a system, criteria of phase equilibrium. Gibbs Phase Rule and its thermodynamic derivation. Derivation of Clausius – Clapeyron equation and its importance in phase equilibria. Phase diagrams of one-component systems (water and sulphur) and two component systems involving eutectics, congruent and incongruent melting points (lead-silver,  $\text{FeCl}_3\text{-H}_2\text{O}$  and Na-K only).

#### **Conductance: (6 Lectures)**

Conductivity, equivalent and molar conductivity and their variation with dilution for weak and strong electrolytes. Kohlrausch law of independent migration of ions.

Transference number and its experimental determination using Hittorf and Moving boundary methods. Ionic mobility. Applications of conductance measurements: determination of degree of ionization of weak electrolyte, solubility and solubility products of sparingly soluble salts, ionic product of water, hydrolysis constant of a salt. Conductometric titrations (only acid base).



### **Electrochemistry: (8 Lectures)**

Reversible and irreversible cells. Concept of EMF of a cell. Measurement of EMF of a cell.

Nernst equation and its importance. Types of electrodes. Standard electrode potential.

Electrochemical series. Thermodynamics of a reversible cell, calculation of thermodynamic properties:  $\Delta G$ ,  $\Delta H$  and  $\Delta S$  from EMF data.

Calculation of equilibrium constant from EMF data. Concentration cells with transference and without transference. Liquid junction potential and salt bridge.

pH determination using hydrogen electrode and quinhydrone electrode.

Potentiometric titrations -qualitative treatment (acid-base and oxidation-reduction only).

### **Section B: Organic Chemistry-3 (30 Lectures)**

Functional group approach for the following reactions (preparations & reactions) to be studied in context to their structure.

#### **Carboxylic acids and their derivatives: (6 Lectures)**

Carboxylic acids (aliphatic and aromatic)

*Preparation:* Acidic and Alkaline hydrolysis of esters.

*Reactions:* Hell – Vohlard - Zelinsky Reaction.

#### **Carboxylic acid derivatives (aliphatic): (Upto 5 carbons)**

*Preparation:* Acid chlorides, Anhydrides, Esters and Amides from acids and their interconversion.

*Reactions:* Comparative study of nucleophilicity of acyl derivatives. Reformatsky Reaction, Perkin condensation.

#### **Amines and Diazonium Salts: (6 Lectures)**

Amines (Aliphatic and Aromatic): (Upto 5 carbons)

*Preparation:* from alkyl halides, Gabriel's Phthalimide synthesis, Hofmann Bromamide reaction.

*Reactions:* Hofmann vs. Saytzeff elimination, Carbylamine test, Hinsberg test, with  $\text{HNO}_2$ , Schotten – Baumann Reaction. Electrophilic substitution (case aniline): nitration, bromination, sulphonation.

**Diazonium salts:** *Preparation:* from aromatic amines. *Reactions:* conversion to benzene, phenol, dyes.

#### **Amino Acids, Peptides and Proteins: (10 Lectures)**

*Preparation of Amino Acids:* Strecker synthesis using Gabriel's phthalimide synthesis. Zwitterion, Isoelectric point and Electrophoresis.

*Reactions of Amino acids:* ester of  $-\text{COOH}$  group, acetylation of  $-\text{NH}_2$  group, complexation with  $\text{Cu}^{2+}$  ions, ninhydrin test.

Overview of Primary, Secondary, Tertiary and Quaternary Structure of proteins.

Determination of Primary structure of Peptides by degradation Edmann degradation (N- terminal) and C-terminal (thiohydantoin and with carboxypeptidase enzyme). Synthesis of simple peptides (upto dipeptides) by N-protection (t-butyloxycarbonyl and phthaloyl) & C- activating groups and Merrifield solid-phase synthesis.

**Carbohydrates:** Classification, and General Properties, Glucose and Fructose (open chain and cyclic structure), Determination of configuration of monosaccharides, absolute configuration of Glucose and Fructose, Mutarotation, ascending and descending in monosaccharides. Structure of disaccharides (sucrose, cellobiose, maltose, lactose) and polysaccharides (starch and cellulose) excluding their structure elucidation. **(8 Lectures)**

#### **Reference Books:**

1. Barrow, G.M. *Physical Chemistry* Tata McGraw-Hill (2007).
2. Castellan, G.W. *Physical Chemistry* 4th Ed. Narosa (2004).
3. Kotz, J.C., Treichel, P.M. & Townsend, J.R. *General Chemistry*, Cengage Learning India Pvt. Ltd.: New Delhi (2009).

4. Mahan, B.H. *University Chemistry*, 3rd Ed. Narosa (1998).
5. Petrucci, R.H. *General Chemistry*, 5th Ed., Macmillan Publishing Co.: New York (1985).
6. Morrison, R. T. & Boyd, R. N. *Organic Chemistry*, Dorling Kindersley (India) Pvt. Ltd. (Pearson Education).
7. Finar, I. L. *Organic Chemistry (Volume 1)*, Dorling Kindersley (India) Pvt. Ltd. (Pearson Education).
8. Finar, I. L. *Organic Chemistry (Volume 2)*, Dorling Kindersley (India) Pvt. Ltd. (Pearson Education).
9. Nelson, D. L. & Cox, M. M. *Lehninger's Principles of Biochemistry 7th Ed.*, W. H. Freeman.
10. Berg, J.M., Tymoczko, J.L. & Stryer, L. *Biochemistry*, W.H. Freeman, 2002.

## Practical: 60 Lectures

### Phase equilibria

- a) Construction of the phase diagram of a binary system (simple eutectic) using cooling curves.
- b) Determination of the critical solution temperature and composition of the phenol water system and study of the effect of impurities on it.
- c) Study of the variation of mutual solubility temperature with concentration for the phenol water system and determination of the critical solubility temperature.

### Conductance

1. Determination of cell constant
2. Determination of equivalent conductance, degree of dissociation and dissociation constant of a weak acid.
3. Perform the following conductometric titrations:
  - a. Strong acid vs. strong base
  - b. Weak acid vs. strong base

### Potentiometry

1. Perform the following potentiometric titrations:
  - i. Strong acid vs. strong base
  - ii. Weak acid vs. strong base
  - iii. Potassium dichromate vs. Mohr's salt

### Section B: Organic Chemistry

**I** Systematic Qualitative Organic Analysis of Organic Compounds possessing monofunctional groups (-COOH, phenolic, aldehydic, ketonic, amide, nitro, amines) and preparation of one derivative.

#### **II**

1. Separation of amino acids by paper chromatography
2. Determination of the concentration of glycine solution by formylation method.
3. Titration curve of glycine
4. Action of salivary amylase on starch
5. Effect of temperature on the action of salivary amylase on starch.
6. Differentiation between a reducing and a nonreducing sugar.

### Reference Books:

1. Vogel, A.I., Tatchell, A.R., Furnis, B.S., Hannaford, A.J. & Smith, P.W.G., *Textbook of Practical Organic Chemistry*, Prentice-Hall, 5th edition, 1996.
2. Mann, F.G. & Saunders, B.C. *Practical Organic Chemistry* Orient-Longman, 1960.
3. Khosla, B. D.; Garg, V. C. & Gulati, A. *Senior Practical Physical Chemistry*, R. Chand & Co.: New Delhi (2011).
4. Ahluwalia, V.K. & Aggarwal, R. *Comprehensive Practical Organic Chemistry*, Universities Press.

## CHG 4.5: Inorganic Chemistry - II (Credits: Theory-04, Practicals-02)

### Theory: 60 Lectures

#### Acids and Bases

Brønsted–Lowry concept, conjugate acids and bases, relative strengths of acids and bases, effects of substituent and solvent, differentiating and levelling solvents. Lewis acid-base concept, classification of Lewis acids and bases, Lux-Flood concept and solvent system concept. Hard and soft acids and bases (HSAB concept), applications of HSAB process. **(10 Lectures)**

#### General Principles of Metallurgy

Chief modes of occurrence of metals based on standard electrode potentials, Ellingham diagrams for reduction of metal oxides using carbon and carbon monoxide as reducing agents.

Hydrometallurgy with reference to cyanide process for gold and silver. Methods of purification of metals (Al, Pb, Ti, Fe, Cu, Ni, Zn, Au): electrolytic refining, zone refining, van Arkel-de Boer process, Parting Process, Mond's process and Kroll Process. **(8 Lectures)**

#### s- and p-Block Elements

Periodicity in *s*- and *p*-block elements with respect to electronic configuration, atomic and ionic size, ionization enthalpy, electron gain enthalpy, electronegativity (Pauling scale).

General characteristics of *s*-block metals like density, melting and boiling points, flame colour and reducing nature.

Oxidation states of *s*- and *p*-block elements, inert-pair effect, diagonal relationships and anomalous behaviour of first member of each group. Allotropy in C, P and S. Complex forming tendency of *s* block elements and a preliminary idea of crown ethers and cryptates, structures of basic beryllium acetate, salicylaldehyde/ acetylacetonato complexes of Group 1 metals. Solutions of alkali metals in liquid ammonia and their properties. Common features, such as ease of formation, solubility and stability of oxides, peroxides, superoxides, sulphates and carbonates of *s*-block metals. **(14 Lectures)**

**Structure, bonding and properties (acidic/ basic nature, oxidizing/ reducing nature and hydrolysis of the following compounds and their applications in industrial and environmental chemistry wherever applicable:**

Diborane and concept of multicentre bonding, hydrides of Groups 13 (EH<sub>3</sub>), 14, 15, 16 and 17.

Oxides of N and P, Oxoacids of P, S and Cl.

Halides and oxohalides of P and S (PCl<sub>3</sub>, PCl<sub>5</sub>, SOCl<sub>2</sub> and SO<sub>2</sub>Cl<sub>2</sub>)

Interhalogen compounds.

A brief idea of pseudohalides

**(14 Lectures)**

#### Noble gases

Rationalization of inertness of noble gases, clathrates, preparation and properties of XeF<sub>2</sub>, XeF<sub>4</sub> and XeF<sub>6</sub>, bonding in these compounds using VBT and shapes of noble gas compounds using VSEPR Theory **(5 Lectures)**

#### Inorganic Polymers

Types of inorganic polymers and comparison with organic polymers, structural features, classification and important applications of silicates. Synthesis, structural features and applications of silicoxanes. Borazines and cyclophosphazenes – preparation, properties and reactions. Bonding in (NPCl<sub>2</sub>)<sub>3</sub>. **(9 Lectures)**

#### Reference Books:

1. Lee, J.D. *Concise Inorganic Chemistry* ELBS, 1991.
2. Cotton, F.A., Wilkinson, G. & Gaus, P.L. *Basic Inorganic Chemistry*, 3rd ed., Wiley.
3. Douglas, B.E., McDaniel, D.H. & Alexander, J.J. *Concepts and Models in Inorganic Chemistry*, John Wiley & Sons.

4. Greenwood, N.N. & Earnshaw. *Chemistry of the Elements*, Butterworth-Heinemann. 1997.
4. Rodger, G.E. *Inorganic and Solid State Chemistry*, Cengage Learning India Edition, 2002.
5. Miessler, G. L. & Donald, A. Tarr. *Inorganic Chemistry* 4th Ed., Pearson, 2010.
6. Atkin, P. *Shriver & Atkins' Inorganic Chemistry* 5th Ed. Oxford University Press (2010).

### **COURSE CODE: CHEM: 4.8**

#### **Practical: 60 Lectures**

1. Iodometric estimation of potassium dichromate and copper sulphate
2. Iodimetric estimation of antimony in tartaremetic
3. Estimation of amount of available chlorine in bleaching powder and household bleaches
4. Estimation of iodine in iodized salts.
5. Iodimetric estimation of ascorbic acid in fruit juices.
6. Estimation of dissolved oxygen in water samples.
7. Gravimetric estimation of sulphate as barium sulphate.
8. Gravimetric estimation of aluminium as oximato complex
9. Preparation of the following: potash alum, chrome alum, tetraamminecopper(II) sulphate monohydrate, potassium trioxalato ferrate(III) (any two, including one double salt and one complex).

#### **Recommended Texts:**

1. Svehla, G. *Vogel's Qualitative Inorganic Analysis*, Pearson Education, 2012.
2. Mendham, J. *Vogel's Quantitative Chemical Analysis*, Pearson, 2009.

## SKILL ENHANCEMENT COURSE

### CHS 3.4: PESTICIDE CHEMISTRY (Credits: 02)

Theory: 30 Lectures

General introduction to pesticides (natural and synthetic), benefits and adverse effects, changing concepts of pesticides, structure activity relationship, synthesis and technical manufacture and uses of representative pesticides in the following classes: Organochlorines (DDT, Gammexene,); Organophosphates (Malathion, Parathion ); Carbamates (Carbofuran and carbaryl); Quinones ( Chloranil), Anilides (Alachlor and Butachlor).

#### Practicals

1. To calculate acidity/alkalinity in given sample of pesticide formulations as per BIS specifications.
2. Preparation of simple organophosphates, phosphonates and thiophosphates.

#### Reference Book:

- Cremlyn, R. *Pesticides. Preparation and Modes of Action*, John Wiley & Sons, New York, 978.

## CHS 4.4: FUEL CHEMISTRY (Credits: 02)

### Theory: 30 Lectures

Review of energy sources (renewable and non-renewable). Classification of fuels and their calorific value.

*Coal:* Uses of coal (fuel and nonfuel) in various industries, its composition, carbonization of coal. Coal gas, producer gas and water gas—composition and uses. Fractionation of coal tar, uses of coal tar bases chemicals, requisites of a good metallurgical coke, Coal gasification (Hydro gasification and Catalytic gasification), Coal liquefaction and Solvent Refining.

*Petroleum and Petrochemical Industry:* Composition of crude petroleum, Refining and different types of petroleum products and their applications.

Fractional Distillation (Principle and process), Cracking (Thermal and catalytic cracking), Reforming Petroleum and non-petroleum fuels (LPG, CNG, LNG, bio-gas, fuels derived from biomass), fuel from waste, synthetic fuels (gaseous and liquids), clean fuels.

Petrochemicals: Vinyl acetate, Propylene oxide, Isoprene, Butadiene, Toluene and its derivatives Xylene.

*Lubricants:* Classification of lubricants, lubricating oils (conducting and non-conducting) Solid and semisolid lubricants, synthetic lubricants.

Properties of lubricants (viscosity index, cloud point, pour point) and their determination.

### Practicals

Related to the subject

### Reference Books:

1. Stocchi, E. *Industrial Chemistry*, Vol-I, Ellis Horwood Ltd. UK (1990).
2. Jain, P.C. & Jain, M. *Engineering Chemistry* Dhanpat Rai & Sons, Delhi.
3. Sharma, B.K. & Gaur, H. *Industrial Chemistry*, Goel Publishing House, Meerut (1996).

**Syllabus for  
B.Sc (Honours) Mathematics**

Three Year Degree Course Semester System

(Under new UGC CBCS guidelines)

## COURSE CURRICULUM MATHEMATICS

Semester	Core Course (14)	Ability Enhancement Course (2)	Skill Enhancement Course (2)	Elective Discipline Specific Course (4)	Elective: Generic Course (4)
<b>I</b>	<b>MTC 1.1</b> Calculus	EGA 1.3 English Communication			<b>MTG 1.4</b> Calculus
	<b>MTC 1.2</b> Algebra				
<b>II</b>	<b>MTC 2.1</b> Real Analysis	ESA 2.3 Environmental Studies			<b>MTG 2.4</b> Differential Equation
	<b>MTC 2.2</b> Differential Equation				
<b>III</b>	<b>MTC 3.1</b> Theory of Real Function		<b>MTS 3.4</b> Logic and sets		<b>MTG 3.5</b> PDE and System of ODE
	<b>MTC 3.2</b> Group Theory I				
	<b>MTC 3.3</b> PDE and System of ODE				
<b>IV</b>	<b>MTC 4.1</b> Numerical Methods		<b>MTS 4.4</b> Graph Theory		<b>MTG 4.5</b> Numerical Methods
	<b>MTC 4.2</b> Riemann Integration and Series of Functions				
	<b>MTC 4.3</b> Ring theory and linear Algebra I				
<b>V</b>	<b>MTC 5.1</b> Multivariate calculus			<b>MTD 5.3</b> Number Theory	
	<b>MTC 5.2</b> Group Theory II			<b>MTD 5.4</b> Probability and Statistics	
<b>VI</b>	<b>MTC 6.1</b> Metric Spaces and Complex Analysis			<b>MTD 6.3</b> Linear programming	
	<b>MTC 6.2</b> Ring Theory and Linear Algebra II			<b>MTD 6.4</b> Mechanics	
<b>Total Credits</b>	<b>14 (84)</b>	<b>2 (4)</b>	<b>2 (4)</b>	<b>4 (24)</b>	<b>4 (24)</b>



## CORE COURSE

**Course Code: MTC 1.1**

**Course Title: Calculus**

**Theory: 60 Lectures**

*Theory Credit: 4*

*Practical credit: 2*

UNIT I Hyperbolic functions, higher order derivatives, Leibniz rule and its applications to problems of type  $e^{ax+b} \sin x$ ,  $e^{ax+b} \cos x$ ,  $(ax+b)^n \sin x$ ,  $(ax+b)^n \cos x$ , concavity and inflection points, asymptotes.

UNIT II Curve tracing in Cartesian coordinates, introduction to polar coordinates and curve tracing in polar coordinates of standard curves (cycloid, cardioid, other simple curves), L'Hospital's rule, applications in business, economics and life sciences.

UNIT III Reduction formulae, derivations and illustrations of reduction formulae of the type  $\int \sin^n x dx$ ,  $\int \cos^n x dx$ ,  $\int \tan^n x dx$ ,  $\int \sec^n x dx$ ,  $\int x^m (\log x)^n dx$ ,  $\int \sin^m x \cos^n x dx$

Volumes by slicing disks and washers methods, volumes by cylindrical shells, volumes by parametric equations, Parameterizing a curve, arc length, arc length of parametric curves, area of surface of revolution.

UNIT IV Techniques of sketching conics, reflection properties of conics, rotation of axes and second degree equations, classification into conics using the discriminant, polar equations of conics.

UNIT V Triple product, introduction to vector functions, operations with vector-valued functions, limits and continuity of vector functions, differentiation and integration of vector functions, tangent and normal components of acceleration, modeling ballistics and planetary motion, Kepler's second law.

## Practical: 60 Lectures

*Practical Credit: 2*

List of practicals (using Scilab/ MATLAB/Mathematica/Maple)

1. Practical based on tracing curves (Trigonometric functions, inverse function, exponential function, logarithmic function and hyperbolic function).
2. (a) Draw the graph of  $\sin x, \cos x, \tan x, \cot x, \sec x, \operatorname{cosec} x$   
(b) Draw the graph of  $\sin^{-1} x, \cos^{-1} x, \tan^{-1} x, \cot^{-1} x, \sec^{-1} x, \operatorname{cosec}^{-1} x$ .  
(c) Draw the graph of  $\sinh x, \cosh x, \tanh x, \operatorname{coth} x$ .  
(d) Draw the graph of  $\log_a x, a_x$ .  
(d) Draw the graph cardioids and asteroid.
3. Plot the graph of polynomial of degree 4 and 5, the derivative graph, the second derivative graph and comparing them.
4. Practical based on integral and reduction formula, summation of the series, rectification, surface and volume.
5. Application of reduction formula for integration.
6. Application of series using integration
7. Application of surface revolution using integration.
8. Application of volume revolution.
9. Practical based on successive differentiation-  
(a) Find the  $n^{\text{th}}$  derivative of the given function at a give point.  
(b) Application of Leibnitz's theorem
10. Evaluation of limits by L'Hospital's rule using Scilab/Matlab.
11. Computation of limit, differentiation and integration of different kind of functions.
12. Application of Taylor's and Maclaurin theorem.
13. Application of partial derivatives.

Note: the above list may be changed annually with the approval of BUGS (Mathematics).

*Recommended Books and References:*

1. G.B. Thomas and R.L. Finney, *Calculus*, 9<sup>th</sup> Ed., Pearson Education, Delhi, 2005.
2. M.J. Strauss, G.L. Bradley and K.J. Smith, *Calculus*, 3<sup>rd</sup> Ed., Dorling Kindersley (India) P. Ltd. (Pearson Education), Delhi, 2007.
3. H. Anton, I. Bivens and S. Davis, *Calculus*, 7<sup>th</sup> Ed., John Wiley and Sons (Asia) P.Ltd., Singapore, 2002.
4. R. Courant and F. John, *Introduction to Calculus and Analysis* (Volumes I & II), Springer- Verlag, New York, Inc., 1989.

**Course Code: MTC 1.2**

**Course Title: Algebra**

**Theory: 60 Lectures**

*Theory Credit:5*

*Tutorial Credit:1*

Unit I Polar representation of complex numbers,  $n^{\text{th}}$  roots of unity, De Moivre's theorem for rational indices and its applications.

UNIT II Equivalence relations, Functions, Composition of functions, Invertible functions, One to one correspondence and cardinality of a set, Well-ordering property of positive integers, Division algorithm, Divisibility and Euclidean algorithm, Congruence relation between integers, Principles of Mathematical Induction, statement of Fundamental Theorem of Arithmetic.

UNIT III Systems of linear equations, row reduction and echelon forms, the matrix equation  $Ax=b$ , solution sets of linear systems, applications of linear systems.

UNITIV Introduction to vector space , vector equations, linear independence of vectors, Introduction to linear transformations, matrix of a linear transformation, inverse of a matrix, characterizations of invertible matrices.

UNITV Dimension of a vector space, subspaces of  $R^n$ , dimension of sub spaces of  $R^n$  and rank of a matrix, Eigen values, Eigen Vectors and Characteristic Equation of a matrix.

*Recommended Books and References:*

1. Titu Andreescu and Dorin Andrica, *Complex Numbers from A to Z*, Birkhauser, 2006.
2. Edgar G. Goodaire and Michael M. Parmenter, *Discrete Mathematics with Graph Theory*, 3rd Ed., Pearson Education (Singapore) P.Ltd., Indian Reprint, 2005.
3. David C. Lay, *Linear Algebra and its Applications*, 3rd Ed., Pearson Education Asia, Indian Reprint, 2007

**Course Code: MTC 2.1**  
**Course Title: Real Analysis**

**Theory: 60 Lectures**

*Theory Credit: 5*

*Tutorial Credit: 1*

- UNIT I      Review of Algebraic and Order Properties of  $R$ -neighborhood of a point in  $R$ , Idea of countable sets, uncountable sets and uncountability of  $R$ . Bounded above sets, Bounded below sets, Bounded Sets, Unbounded sets, Suprema and Infima
- UNIT II      The Completeness Property of  $R$ , The Archimedean Property, Density of Rational (and Irrational) numbers in  $R$ , Intervals. Limit points of a set, Isolated points, Illustrations of Bolzano-Weierstrass theorem for bounded sets.
- UNIT III     Sequences, Bounded sequence, Convergent sequence, Limit of a sequence. Limit Theorems, Monotone Sequences, Monotone Convergence Theorem.
- UNIT IV     Subsequences, Divergence Criteria, Monotone Subsequence Theorem (statement only), Bolzano Weierstrass Theorem for Sequences. Cauchy sequence, Cauchy's Convergence Criterion.
- UNIT V      Infinite series, convergence and divergence of infinite series, Cauchy Criterion, Tests for convergence :Comparison test, Limit Comparison test, Ratio Test, Cauchy's  $n^{\text{th}}$  root test, Integral test, Alternating series, Leibniz test, Absolute and Conditional convergence.

*Recommended Books and References:*

1. R.G. Bartle and D.R. Sherbert, *Introduction to Real Analysis*, 3<sup>rd</sup> Ed., John Wiley and Sons (Asia) Pvt. Ltd., Singapore, 2002.
2. Gerald G. Bilodeau, Paul R. Thie, G.E. Keough, *An Introduction to Analysis*, 2<sup>nd</sup> Ed., Jones & Bartlett, 2010.
3. Brian S. Thomson, Andrew .M. Bruckner and Judith B. Bruckner, *Elementary Real Analysis*, Prentice Hall, 2001.
4. S.K. Berberian , *A First Course in Real Analysis*, Springer Verlag, New York, 1994.

**Course Code: MTC 2.2**  
**Course Title: Differential Equations**

**Theory: 60 Lectures**

*Theory Credit : 4*

*Practical credit: 2*

- UNIT I      Differential equations and mathematical models. General, particular, explicit, implicit and singular solutions of a differential equation. Exact differential equations and integrating factors, separable equations and equations reducible to this form, linear equation and Bernoulli equations, special integrating factors and transformations.
- UNIT II      Introduction to compartmental model, exponential decay model, lake pollution model (case study of Lake Burley Griffin), drug assimilation in to the blood (case of a single cold pill, case of a course of cold pills), exponential growth of population, limited growth of population, limited growth with harvesting.
- UNIT III     General solution of homogeneous equation of second order, principle of superposition for homogeneous equation, Wronskian: Its properties and applications.
- UNIT IV     Linear homogeneous and non-homogeneous equations of higher order with constant coefficients, Euler's equation, method of undetermined coefficients, method of variation of parameters.
- UNIT V      Equilibrium points, Interpretation of the phase plane, predatory prey model and its analysis, epidemic model of influenza and its analysis, battle model and its analysis.

## Practical: 60 Lectures

*Practical Credit: 2*

List of Practical (using any software)

1. Plotting of second order solution family of differential equation.
2. Plotting of third order solution family of differential equation.
3. Growth model (exponential case only).
4. Decay model (exponential case only).
5. Lake pollution model (with constant seasonal flow and pollution concentration).
6. Case of single cold pill and a course of cold pills.
7. Limited growth of population (with and without harvesting).
8. Predatory prey model (basic volterra model, with density dependence, effect of DDT, two prey one predator).
9. Epidemic model of influenza (basic epidemic model, contagious for life, disease with carriers).
10. Battle model (basic battle model, jungle warfare, long range weapons).
11. Plotting of recursive sequences.
12. Study the convergence of sequences through plotting.
13. Verify Bolzano-Weierstrass theorem through plotting of sequences and hence identify convergent sub sequences from the plot.
14. Study the convergence/divergence of infinite series by plotting their sequences of partial sum.
15. Cauchy's root test by plotting  $n^{\text{th}}$  roots.
16. Ratio test by plotting the ratio of  $n^{\text{th}}$  and  $(n+1)^{\text{th}}$  term.

### ***Recommended Books and References:***

1. Belinda Barnes and Glenn R. Fulford, *Mathematical Modeling with Case Studies, A Differential Equation Approach using Maple and Matlab*, 2<sup>nd</sup> Ed., Taylor and Francis group, London and New York, 2009.
2. C. H. Edwards and D .E. Penny, *Differential Equations and Boundary Value problems Computing and Modeling*, Pearson Education India, 2005.
3. S. L. Ross, *Differential Equations*, 3<sup>rd</sup> Ed., John Wiley and Sons, India, 2004.
4. Martha Labell, James P Braselton, *Differential Equations with MATHEMATICA*, 3<sup>rd</sup> Ed., Elsevier Academic Press, 2004.

**Course Code: MTC 3.1**  
**Course Title: Theory of Real Functions**

**THEORY : 60 Lectures**

*Theory Credit: 5*

*Tutorial Credit:1*

UNIT I Limits of functions (approach), sequential criterion for limits, divergence criteria. Limit theorems, one sided limits. Infinite limits and limits at infinity.

UNIT II Continuous functions, sequential criterion or continuity and discontinuity. Algebra of continuous functions. Continuous functions on an interval, intermediate value theorem, location of roots theorem, preservation of intervals theorem. Uniform continuity, non-uniform continuity criteria, uniform continuity theorem.

UNIT III Differentiability of a function at a point and in an interval, Caratheodory's theorem, algebra of differentiable functions. Relative extrema, interior extremum theorem. Rolle's theorem, Mean value theorem. Cauchy's mean value theorem.

UNIT IV L'Hospital's rule. Intermediate value property of derivatives, Darboux's theorem. Applications of mean value theorem to inequalities and approximation of polynomials. Taylor's theorem to inequalities.

¶



$$\ln(1+x), \frac{1}{1+x} \text{ and } (1+x)^2$$

*Recommended Books and References:*

1. R. Bartle and D. R. Sherbert, *Introduction to Real Analysis*, John Wiley and Sons, 2003.
2. S. R. Ghorpade and B. V. Limaye, *A Course in Calculus and Real Analysis*, Springer, 2006.
3. K. A. Ross, *Elementary Analysis: The Theory of Calculus*, Springer, 2004.
4. A. Mattuck, *Introduction to Analysis*, Prentice Hall, 1999.

**Course Code: MTC 3.2**  
**Course Title: Group Theory I**

**Theory : 60 Lectures**

*Theory Credit: 5*

*Tutorial Credit: 1*

UNIT I Definition and examples of groups including permutation groups and quaternion groups (illustration through matrices), Symmetries of a square, Dihedral groups, elementary properties of groups.

UNIT II Sub groups and examples of subgroups, centralizer, normalizer, center of a group, product of two sub groups. Properties of cyclic groups, classification of subgroups of cyclic groups.

UNIT III Cycle notation for permutations, properties of permutations, even and odd permutations, alternating group, properties of cosets, Lagrange's theorem and consequences including Fermat's Little theorem.

UNIT IV External direct product of a finite number of groups, normal sub groups, factor groups, Cauchy's theorem for finite abelian groups.

UNIT V Group homomorphisms, properties of homomorphisms, Cayley's theorem, properties of isomorphisms, First, Second and Third isomorphism theorems.

*Recommended Books and References:*

1. John B. Fraleigh, *A First Course in Abstract Algebra*, 7<sup>th</sup> Ed., Pearson, 2002.
2. M. Artin, *Abstract Algebra*, 2<sup>nd</sup> Ed., Pearson, 2011.
3. Joseph A. Gallian, *Contemporary Abstract Algebra*, 4<sup>th</sup> Ed., Narosa Publishing House, New Delhi, 1999.
4. Joseph J. Rotman, *An Introduction to the Theory of Groups*, 4<sup>th</sup> Ed., Springer Verlag, 1995.
5. I. N. Herstein, *Topics in Algebra*, Wiley Eastern Limited, India, 1975.



**Course Code: MTC 3.3**  
**Course Title: PDE and system of ODE**

**Theory : 60 Lectures**

*Theory Credit: 4*

*Practical Credit: 2*

- UNIT I Partial Differential Equations– Basic concepts and Definitions, Mathematical Problems. First-Order Equations: Classification, Construction and Geometrical Interpretation. Method of Characteristics for obtaining General Solution of Quasi Linear Equations. Canonical Forms of First-order Linear Equations.
- UNIT II Method of Separation of Variables for solving first order partial differential equations. Derivation of Heat equation, Wave equation and Laplace equation. Classification of second order linear equations as hyperbolic, parabolic or elliptic. Reduction of second order Linear Equations to canonical forms.
- UNIT III The Cauchy problem, the Cauchy- Kowalewskaya theorem, Cauchy problem of an infinite string. Initial Boundary Value Problems, Semi-Infinite String with a fixed end, Semi-Infinite String with a Free end.
- UNIT IV Equations with non-homogeneous boundary conditions, Non-Homogeneous Wave Equation. Method of separation of variables, Solving the Vibrating String Problem, Solving the Heat Conduction problem.
- UNIT V Systems of linear differential equations, types of linear systems, differential operators, an operator method for linear systems with constant coefficients, Basic Theory of linear systems in normal form, homogeneous linear systems with constant coefficients: Two Equations in two unknown functions, The method of successive approximations, the Euler method, the modified Euler method, The Runge Kutta method.

## Practical : 60 Lectures

Practical Credit: 2

List of Practicals (using any software)

- (i) Solution of Cauchy problem for first order PDE.
- (ii) Finding the characteristics for the first order PDE.
- (iii) Plot the integral surfaces of a given first order PDE with initial data.

(i) Solution of the wave equation  $\frac{\partial^2 u}{\partial t^2} - c^2 \frac{\partial^2 u}{\partial x^2} = \Phi$  for the following associated conditions

(a)  $u(x, 0) = \Phi(x), u(x, 0) = \psi(x), x \in \mathbb{R}, t \geq 0$

(b)  $u(x, 0) = \Phi(x), u(x, 0) = \psi(x), u(0, t) = 0, u(l, t) = 0, x \in (0, \infty), t \geq 0$

(c)  $u(x, 0) = \Phi(x), u(x, 0) = \psi(x), u_x(0, t) = 0, u_x(l, t) = 0, x \in (0, \infty), t \geq 0$

(d)  $u(x, 0) = \Phi(x), u(x, 0) = \psi(x), u(0, t) = 0, u(l, t) = 0, 0 < x < l, t \geq 0$

(ii) Solution of wave equation  $\frac{\partial^2 u}{\partial t^2} - c^2 \frac{\partial^2 u}{\partial x^2} = 0$  for the following associated conditions:

(a)  $u(x, 0) = \Phi(x), u(0, t) = a, u(l, t) = b, 0 < x < l, t \geq 0$

(b)  $u(x, 0) = \Phi(x), u_x(0, t) = 0, 0 < t < T$

(c)  $u(x, 0) = \Phi(x), u(0, t) = a, u_x(0, \infty), t \geq 0$

*Recommended Books and References:*

1. Tyn Myint-U and Lokenath Debnath, *Linear Partial Differential Equations for Scientists and Engineers*, 4<sup>th</sup> edition, Springer, Indian reprint, 2006.
2. S.L.Ross, *Differential equations*, 3<sup>rd</sup> Ed., John Wiley and Sons, India, 2004.
3. Martha LAbell, James P Braselton, *Differential equations with MATHEMATICA*, 3<sup>rd</sup> Ed., Elsevier Academic Press, 2004.

**Course Code: MTC 4.1**  
**Course Title: Numerical Methods**

**Theory : 60 Lectures**

*Theory Credit: 4*

*Practical Credit: 2*

***Use of Scientific Calculator is allowed.***

- UNIT I Algorithms, Convergence, Errors: Relative, Absolute, Roundoff, Truncation.
- UNIT II Transcendental and Polynomial equations: Bisection method, Newton's method, Secant method. Rate of convergence of these methods.
- UNIT III System of linear algebraic equations: Gaussian Elimination and Gauss Jordan methods. Gauss Jacobi method, Gauss Seidel method and their convergence analysis.
- UNIT IV Interpolation: Lagrange and Newton's methods. Error bounds. Finite difference operators. Gregory forward and back ward difference interpolation.
- UNIT V Numerical Integration: Trapezoidal rule, Simpson's  $1/3^{\text{rd}}$  rule, Simpson's  $3/8^{\text{th}}$  rule, Boole's Rule. Mid point rule, Composite Trapezoidal rule, Composite Simpson's rule. Ordinary Differential Equations: Euler's method. Runge-Kutta methods of orders two and four.

## Practical : 60 Lectures

*Practical Credits: 2*

List of Practicals (using any software)

- (i) Calculate the sum  $1/1+1/2+1/3+1/4+\dots+1/N$
- (ii) To find the absolute value of an integer.
- (iii) Enter 100 integers into an array and sort them in an ascending order.
- (iv) Bisection Method.
- (v) Newton Raphson Method.
- (vi) Secant Method.
- (vii) Regula Falsi Method.
- (viii) LU decomposition Method. (ix) Gauss-Jacobi Method.
- (x) Gauss-Siedel Method.
- (xi) Lagrange Interpolation or Newton Interpolation. (xii) Simpson's rule.

*Note: For any of the CAS (Computer aided software) Data types-simple data types, floating data types, character data type, arithmetic operators and operator precedence, variables and constant declarations, expressions, input/output, relational operators, logical operators and logical expressions, control statements and loop statements, Array should be introduced to the students.*

*Recommended Books and References:*

1. Brian Bradie, *A Friendly Introduction to Numerical Analysis*, Pearson Education, India, 2007.
2. M. K. Jain, S. R. K. Iyengar and R. K. Jain, *Numerical Methods for Scientific and Engineering Computation* 5<sup>th</sup> Ed., New age International Publisher, India, 2007.
3. C. F. Gerald and P. O. Wheatley, *Applied Numerical Analysis*, Pearson Education, India, 2008.
4. Uri M. Ascher and Chen Greif, *A First Course in Numerical Methods*, 7<sup>th</sup> Ed., PHI Learning Private Limited, 2013.
5. John H. Mathews and Kurtis D. Fink, *Numerical methods using Matlab*, 4<sup>th</sup> Ed., PHI Learning Private Limited, 2012.

**Course Code: MTC 4.2**  
**Course Title: Riemann Integration and Series of Functions**

**Theory : 60 Lectures**

*Theory Credit: 5*

*Tutorial Credit: 1*

- UNIT I      Riemann integration; inequalities of upper and lower sums; Riemann conditions of integrability. Riemann sum and definition of Riemann integral through Riemann sums; equivalence of two definitions.
- UNIT II      Riemann integrability of monotone and continuous functions, Properties of the Riemann integral; definition and integrability of piece wise continuous and monotone functions. Intermediate Value theorem for Integrals; Fundamental theorems of Calculus.
- UNIT III      Improper integrals; Convergence of Beta and Gamma functions.
- UNIT IV      Point wise and uniform convergence of sequence of functions. Theorems on continuity, derivability and integrability of the limit function of a sequence of functions. Series of functions; Theorems on the continuity and derivability of the sum function of a series of functions; Cauchy criterion for uniform convergence and Weierstrass M-Test.
- UNIT V      Limit superior and Limit inferior. Power series, radius of convergence, Cauchy Hadamard Theorem, Differentiation and integration of power series; Abel's Theorem; Weierstrass Approximation Theorem.

*Recommended Books and References:*

- 1 .      K. A. Ross, *Elementary Analysis, The Theory of Calculus*, Undergraduate Texts in Mathematics, Springer(SIE), Indian reprint, 2004.
2.      R. G. Bartle D. R. Sherbert, *Introduction to Real Analysis*, 3<sup>rd</sup> Ed., John Wiley and Sons(Asia) Pvt. Ltd., Singapore, 2002.
3.      Charles G. Denlinger, *Elements of Real Analysis*, Jones & Bartlett (Student Edition), 2011.

**Course Code: MTC 4.3**  
**Course Title: Ring Theory and Linear Algebra I**

**Theory : 60 Lectures**

*Theory Credit: 5*

*Tutorial Credit:1*

- UNIT I      Definition and examples of rings, properties of rings, subrings, integral domains and fields, characteristic of a ring.
- UNIT II      Ideal, ideal generated by a subset of a ring, factor rings, operations on ideals, prime and maximal ideals.
- UNIT III     Ring homomorphisms, properties of ring homomorphisms, Isomorphism theorems I, II And III, field of quotients.
- UNIT IV     Vector spaces, subspaces, algebra of sub spaces, quotient spaces, linear combination of vectors, linear span, linear independence, basis and dimension, dimension of subspaces.
- UNIT V      Linear transformations, nullspace, range, rank and nullity of a linear transformation, matrix representation of a linear transformation, algebra of linear transformations. Isomorphisms, Isomorphism theorems, invertibility and isomorphisms, change of coordinate matrix.

*Recommended Books and References:*

1. John B. Fraleigh, *A First Course in Abstract Algebra*, 7<sup>th</sup> Ed., Pearson, 2002.
2. M. Artin, *Abstract Algebra*, 2<sup>nd</sup> Ed., Pearson, 2011.
3. Stephen H. Friedberg, Arnold J. Insel, Lawrence E. Spence, *Linear Algebra*, 4<sup>th</sup> Ed., Prentice- Hall of India Pvt. Ltd., New Delhi, 2004.
4. Joseph A. Gallian, *Contemporary Abstract Algebra*, 4<sup>th</sup> Ed., Narosa Publishing House, New Delhi, 1999.
5. S. Kumaresan, *Linear Algebra- A Geometric Approach*, Prentice Hall of India, 1999.

**Course Code: MTC 5.1**  
**Course Title: Multivariate Calculus**

**Theory : 60 Lectures**

*Theory Credit: 5*

*Tutorial Credit:1*

***Use of Scientific calculator is allowed.***

- UNIT I      Functions of several variables, limit and continuity of functions of two variables Partial differentiation, total differentiability and differentiability, sufficient condition for differentiability. Chain rule for one and two independent parameters.
- UNIT II      Directional derivatives, the gradient, maximal and normal property of the gradient, tangent planes, Extrema of functions of two variables, method of Lagrange multipliers, constrained optimization problems, Definition of vector field, divergence and curl.
- UNIT III      Double integration over rectangular region, double integration over non-rectangular region, Double integral in polar co-ordinates, Triple integrals, Triple integral over a parallelepiped and solid regions. Volume by triple integrals, cylindrical and spherical co-ordinates.
- UNIT IV      Change of variables in double integrals and triple integrals. Line integrals, Applications of line integrals: Mass and Work. Fundamental theorem for line integrals, conservative vector fields, independence of path.
- UNIT V      Green's theorem, surface integrals, integrals over parametrically defined surfaces. Stoke's theorem, The Divergence theorem.

*Recommended Books and References:*

1. G. B. Thomas and R. L. Finney, *Calculus*, 9<sup>th</sup> Ed., Pearson Education, Delhi, 2005.
2. M. J. Strauss, G. L. Bradley and K. J. Smith, *Calculus*, 3<sup>rd</sup> Ed., Dorling Kindersley (India) Pvt. Ltd. (Pearson Education), Delhi, 2007.
3. E. Marsden, A. J. Tromba and A. Weinstein, *Basic Multivariable Calculus*, Springer (SIE), Indian reprint, 2005.
4. James Stewart, *Multivariable Calculus, Concepts and Contexts*, 2<sup>nd</sup> Ed., Brooks/Cole, Thomson Learning, USA, 2001.

**Course Code: MTC 5.2**  
**Course Title: Group Theory II**

**Theory : 60 Lectures**

*Theory Credit: 5*

*Tutorial Credit:1*

- UNIT I Automorphism, inner automorphism, automorphism groups, automorphism groups of finite and infinite cyclic groups, applications of factor groups to automorphism groups, Characteristic subgroups, Commutator sub group and its properties.
- UNIT II Properties of external direct products, the group of units modulo  $n$  as an external direct product, internal direct products, Fundamental Theorem of finite abelian groups.
- UNIT III Group actions, stabilizers and kernels, permutation representation associated with a given group action, Applications of group actions: Generalized Cayley's theorem, Index theorem.
- UNIT IV Groups acting on themselves by conjugation, class equation and consequences, conjugacy in  $S_n, p$ -groups.

*Recommended Books and References:*

1. John B. Fraleigh, *A First Course in Abstract Algebra*, 7<sup>th</sup> Ed., Pearson, 2002.
2. M. Artin, *Abstract Algebra*, 2<sup>nd</sup> Ed., Pearson, 2011.
3. Joseph A. Gallian, *Contemporary Abstract Algebra*, 4<sup>th</sup> Ed., Narosa Publishing House, 1999.
4. David S. Dummit and Richard M. Foote, *Abstract Algebra*, 3<sup>rd</sup> Ed., John Wiley and Sons (Asia) Pvt. Ltd. Singapore, 2004.
5. R. Durbin, *Modern Algebra*, John Wiley & Sons, New York Inc., 2000.



**Course Code: MTC 6.1**  
**Course Title: Metric Spaces and Complex Analysis**

**Theory : 60 Lectures**

*Theory Credit: 5*

*Tutorial Credit:1*

- UNIT I      Metric spaces: definition and examples. Sequences in metric spaces, Cauchy sequences. Complete Metric Spaces. Open and closed balls, neighbourhood, open set, interior of a set. Limit point of a set, closed set, diameter of a set, Cantor's theorem. Sub spaces, dense sets, separable spaces.
- UNIT II      Continuous mappings, sequential criterion and other characterizations of continuity. Uniform continuity. Homeomorphism, Contraction mappings, Banach Fixed point Theorem. Connectedness, connected subsets of  $\mathbb{R}$ .
- UNIT III     Limits, Limits involving the point at infinity, continuity. Properties of complex numbers, regions in the complex plane, functions of complex variable, mappings. Derivatives, differentiation formulas, Cauchy-Riemann equations, sufficient conditions for differentiability.
- UNIT IV      Analytic functions, examples of analytic functions, exponential function, Logarithmic function, trigonometric function, derivatives of functions, definite integrals of functions. Contours, Contour integrals and its examples, upper bounds for moduli of contour integrals. Cauchy-Goursat theorem, Cauchy integral formula.
- UNIT V      Liouville's theorem and the fundamental theorem of algebra. Convergence of Sequences and series, Taylor series and its examples. Laurent series and its examples, absolute and uniform convergence of power series.

*Recommended Books and References:*

1. Satish Shirali and Harikishan L. Vasudeva, *Metric Spaces*, Springer Verlag, London, 2006.
2. S. Kumaresan, *Topology of Metric Spaces*, 2<sup>nd</sup> Ed., Narosa Publishing House, 2011.
3. G. F. Simmons, *Introduction to Topology and Modern Analysis*, Mc Graw-Hill, 2004.
4. James Ward Brown and Ruel V. Churchill, *Complex Variables and Applications*, 8<sup>th</sup> Ed., McGraw-Hill International Edition, 2009.
5. Joseph Bak and Donald J. Newman, *Complex Analysis*, 2<sup>nd</sup> Ed., Under graduate Texts in Mathematics, Springer-Verlag New York, Inc., New York, 1997.

**Course Code: MTC 6.2**  
**Course Title: Ring Theory and Linear Algebra II**

**Theory : 60 Lectures**

*Theory Credit:5*

*Tutorial Credit:1*

- UNIT I      Polynomial rings over commutative rings, division algorithm and consequences, principal ideal domains, factorization of polynomials, reducibility tests, irreducibility tests, Eisenstein criterion.
- UNIT II      Unique factorization in  $Z[x]$ . Divisibility in integral domains, irreducibles, primes, unique factorization domains, Euclidean domains.
- UNIT III      Dual spaces, dual basis, double dual, transpose of a linear transformation and its matrix in the dual basis, annihilators, Eigen spaces of a linear operator, diagonalizability, invariant subspaces and Cayley-Hamilton theorem. The minimal polynomial for a linear operator.
- UNIT IV      Inner product spaces and norms, Gram-Schmidt orthogonalisation process, orthogonal complements, Bessel's inequality, the adjoint of a linear operator.
- UNIT V      Least Squares Approximation, minimal solutions to systems of linear equations, Normal and self-adjoint operators, Orthogonal projections and Spectral theorem.

*Recommended Books and References:*

1. John B. Fraleigh, *A First Course in Abstract Algebra*, 7<sup>th</sup> Ed., Pearson, 2002.
2. M. Artin, *Abstract Algebra*, 2<sup>nd</sup> Ed., Pearson, 2011.
3. Joseph A. Gallian, *Contemporary Abstract Algebra*, 4<sup>th</sup> Ed., Narosa Publishing House, 1999.
4. Stephen H. Friedberg, Arnold J. Insel, Lawrence E. Spence, *Linear Algebra*, 4<sup>th</sup> Ed., Prentice- Hall of India Pvt. Ltd., New Delhi, 2004.
5. S. Kumaresan, *Linear Algebra –A Geometric Approach*, Prentice Hall of India, 1999.

## DISCIPLINE SPECIFIC ELECTIVE

**Course Code: MTD 5.3**  
**Course Title: Number Theory**  
**Theory : 60 Lectures**

*Theory Credit: 5*

*Tutorial Credit:1*

- UNIT I      Linear Diophantine equation, prime counting function, statement of prime number theorem, Goldbach conjecture, linear congruences, complete set of residues, Chinese Remainder theorem, Fermat's Little theorem, Wilson's theorem.
- UNIT II      Number theoretic functions, sum and number of divisors, totally multiplicative functions, definition and properties of the Dirichlet product, the Mobius Inversion formula.
- UNIT III      The greatest integer function, Euler's phi-function, Euler's theorem, reduced set of residues, some properties of Euler's phi-function.
- UNIT IV      Order of an integer modulo n, primitive roots for primes, composite numbers having primitive roots, Euler's criterion, the Legendre symbol and its properties, quadratic reciprocity, quadratic congruences with composite moduli.
- UNIT V      Public key encryption, R S A encryption and decryption, the equation  $x^2+y^2=z^2$ , Fermat's Last theorem.

### *Recommended Books and References:*

1. David M. Burton, *Elementary Number Theory*, 6<sup>th</sup> Ed., Tata McGraw-Hill, Indian reprint, 2007.
2. Neville Robinns, *Beginning Number Theory*, 2<sup>nd</sup> Ed., Narosa Publishing House Pvt. Ltd., Delhi, 2007.

**Course Code: MTD 5.4**  
**Course Title: Probability and Statistics**

**Theory : 60 Lectures**

*Theory Credit:5*

*Tutorial Credit:1*

- UNIT I      Sample space, probability axioms, real random variables (discrete and continuous), cumulative distribution function, probability mass/density functions, mathematical expectation, moments, moment generating function, characteristic function.
- UNIT II      Discrete distributions: uniform, binomial, Poisson, geometric, negative binomial, continuous distributions: uniform, normal, exponential. Joint cumulative distribution function and its properties, joint probability density functions, marginal and conditional distributions.
- UNIT III      Expectation of function of two random variables, conditional expectations, independent random variables. Bivariate normal distribution, correlation coefficient, joint moment generating function(jmgf) and calculation of covariance(from jmgf), linear regression for two variables.
- UNIT IV      Chebyshev's inequality, statement and interpretation of (weak) law of large numbers and strong law of large numbers, Central Limit theorem for independent and identically distributed random variables with finite variance,
- UNIT V      Markov Chains, Chapman-Kolmogorov equations, classification of states.

*Recommended Books and References:*

1. Robert V. Hogg, Joseph W. Mc Kean and Allen T. Craig, Introduction to Mathematical Statistics, Pearson Education, Asia, 2007.
2. Irwin Miller and Marylees Miller, John E. Freund, Mathematical Statistics with Applications, 7<sup>th</sup> Ed., Pearson Education, Asia, 2006.
3. Sheldon Ross, Introduction to Probability Models, 9<sup>th</sup> Ed., Academic Press, Indian Reprint, 2007.
4. Alexander M. Mood, Franklin A. Graybill and Duane C. Boes, Introduction to the Theory of Statistics, 3<sup>rd</sup> Ed., Tata McGraw-Hill, Reprint 2007

**Course Code: MTD 6.3**  
**Course Title: Linear Programming**

**Theory : 60 Lectures**

*Theory Credit:5*

*Tutorial Credit:1*

- UNIT I Introduction to linear programming problem, Theory of simplex method, optimality and unboundedness, the simplex algorithm, simplex method in tableau format, introduction to artificial variables, two-phase method, Big-M method and their comparison.
- UNIT II Duality, formulation of the dual problem, primal-dual relationships, economic interpretation of the dual.
- UNIT III Transportation problem and its mathematical formulation, northwest-corner method least cost method and Vogel approximation method for determination of starting basic solution.
- UNIT IV Algorithm for solving transportation problem, assignment problem and its mathematical formulation, Hungarian method for solving assignment problem.
- UNIT V Game theory: formulation of two person zero sum games, solving two person zero sum games, games with mixed strategies, graphical solution procedure, linear programming solution of games.

*Recommended Books and References:*

1. Mokhtar S. Bazaraa, John J. Jarvis and Hanif D. Sherali, *Linear Programming and Network Flows*, 2<sup>nd</sup> Ed., John Wiley and Sons, India, 2004.
2. F. S. Hillier and G. J. Lieberman, *Introduction to Operations Research*, 9<sup>th</sup> Ed., Tata McGraw Hill, Singapore, 2009.
3. G. Hadley, *Linear Programming*, Narosa Publishing House, New Delhi, 2002.

**Course Code: MTD 6.4**  
**Course Title: Mechanics**

**Theory : 60 Lectures**

*Theory Credit:5*

*Tutorial Credit:1*

- UNIT I Moment of a force about a point and an axis, couple and couple moment, Moment of a couple about a line, resultant of a force system, distributed force system, free body diagram, free body involving interior sections, general equations of equilibrium, two point equivalent loading, problems arising from structures, static indeterminacy.
- UNIT II Laws of Coulomb friction, application to simple and complex surface contact friction problems, transmission of power through belts, screw jack, wedge, first moment of an area and the centroid, other centers.
- UNIT III Theorem of Pappus-Guldinus, second moments and the product of area of a plane area, transfer theorems, relation between second moments and products of area, polar moment of area, principal axes.
- UNIT IV Conservative force field, conservation for mechanical energy, work energy equation, kinetic energy and work kinetic energy expression based on center of mass, moment of momentum equation for a single particle and a system of particles, translation and rotation of rigid bodies.
- UNIT V Chasles' theorem, general relationship between time derivatives of a vector for different references, relationship between velocities of a particle for different references, acceleration of particle for different references.

*Recommended Books and References:*

1. I. H. Shames and G. Krishna Mohan Rao, *Engineering Mechanics: Statics and Dynamics*, (4th Ed.), Dorling Kindersley (India) Pvt. Ltd. (Pearson Education), Delhi, 2009.
2. R. C. Hibbeler and Ashok Gupta, *Engineering Mechanics: Statics and Dynamics*, 11<sup>th</sup> Ed., Dorling Kindersley (India) Pvt. Ltd. (Pearson Education), Delhi.

## SKILL ENHANCEMENT COURSE

**Course Code: MTS 3.4**  
**Course Title: Logic and Sets**

**Theory : 60 Lectures**

*Theory Credit: 2*

- UNIT I Introduction, propositions, truth table, negation, conjunction and disjunction. Implications, bi-conditional propositions, converse, contra-positive and inverse propositions and precedence of logical operators.
- UNIT II Propositional equivalence: Logical equivalences. Predicates and quantifiers: Introduction, Quantifiers, Binding variables and Negations.
- UNIT III Sets, subsets, Set operations and the laws of set theory and Venn diagrams. Examples of finite and infinite sets. Finite sets and counting principle. Empty set, properties of empty set. Standard set operations.
- UNIT IV Classes of sets. Power set of a set. Difference and Symmetric difference of two sets. Set identities, Generalized union and intersections.
- UNIT V Relation: Product set, Composition of relations, Types of relations, Partitions, Equivalence Relations with example of congruence modulo relation, Partial ordering relations, n-ary relations.

*Recommended Books and References:*

1. R. P. Grimaldi, *Discrete Mathematics and Combinatorial Mathematics*, Pearson Education, 1998.
2. P. R. Halmos, *Naïve Set Theory*, Springer, 1974.
3. E. Kamke, *Theory of Sets*, Dover Publishers, 1950.

**Course Code: MTS 4.4**  
**Course Title: Graph Theory**

**Theory : 60 Lectures**

*Theory Credit:2*

- UNIT I      Definition, examples and basic properties of graphs, pseudographs, complete graphs.
- UNIT II      Bi-partite graphs, weighted graph, adjacency and incidence matrices,
- UNIT III      Isomorphism of graphs paths and circuits, Eulerian circuits.
- UNIT IV      Hamiltonian cycles, Travelling salesman's problem.
- UNIT V      Shortest path, Dijkstra's algorithm, Floyd-Warshall algorithm.

*Recommended Books and References:*

1. B. A. Davey and H. A. Priestley, *Introduction to Lattices and Order*, Cambridge University Press, Cambridge, 1990.
2. Edgar G. Goodaire and Michael M. Parmenter, *Discrete Mathematics with Graph Theory*, 2<sup>nd</sup> Edition, Pearson Education (Singapore) Pvt. Ltd., Indian Reprint 2003.



## Generic Elective Course

**Course Code: MTG 1.4**

**Course Title: Calculus**

**Theory : 60 Lectures**

*Theory credit :4*

*Practical credit :2*

- UNIT I Definition of the limit of a function ( $\epsilon$ - $\delta$ ) form, Continuity. Types of discontinuities. Properties of continuous functions on a closed interval. Differentiability. Differentiability implies continuity. Converse not true. Rolle's Theorem. Lagrange's theorem (Lagrange's form). Maclaurin's theorem and expansions. Evaluation of limits by L'Hospital's rule.
- UNIT II Hyperbolic functions. Identities and its derivatives. Inverse hyperbolic functions. Derivatives. Higher order derivatives. Leibnitz's theorem and its applications. Differentiation of homogeneous functions. Euler's Theorem. Total derivative and differential. Differentiation of implicit functions and composite functions. Jacobians, maxima and minima functions of 2 & 3 independent variable. Lagrange's method (without proof), problems on this concept.
- UNIT III Sub tangent and sub normal. Polar coordinate angles between the tangents. Slope of the tangent. Angle of intersection of two curves. Polar sub tangent and polar sub-normal. Length of arc. Polar coordinates. Angle between radius vector and tangent. Radius of curvature in Cartesian and polar coordinates. p-r equations. Evolutes. Asymptotes. Methods of finding asymptotes of rational algebraic curves with special cases.
- UNIT IV Volumes and surfaces of revolution. Reduction formula. Beta and Gamma functions. Properties and problems
- UNIT V Double integrals. Change of order of integration. Triple integrals. Applications to area. Surface area and volume

### **REFERENCE BOOKS:**

1. K.C Maity, R. Ghosh, *Differential Calculus* (7<sup>th</sup> Edition), New Central Book Agency, 2004.
2. K.C Maity, R. Ghosh, *Integral Calculus* (7<sup>th</sup> Edition), New Central Book Agency, 2004.

## Practical : 60 Lectures

### **Practical credit :2**

List of practicals (using Scilab/MATlab/Mathematica/Maple)

1. Practical based on tracing curves (Trigonometric functions, inverse function, exponential function, logarithmic function and hyperbolic function).
2. (a) draw the graph of  $\sin x, \cos x, \tan x, \cot x, \sec x, \operatorname{cosec} x$   
(b) draw the graph of  $\sin^{-1} x, \cos^{-1} x, \tan^{-1} x, \cot^{-1} x, \sec^{-1} x, \operatorname{cosec}^{-1} x$ .  
(c) draw the graph of  $\sinh x, \cosh x, \tanh x, \operatorname{coth} x$ .  
(d) draw the graph of  $\log_a x, a_x$ .  
(d) draw the graph cardioids and asteroid.
3. Plot the graph of polynomial of degree 4 and 5, the derivative graph, the second derivative graph and comparing them.
4. practical based on integral and reduction formula, summation of the series, rectification, surface and volume.
5. application of reduction formula for integration.
6. application of series using integration
7. application of surface revolution using integration.
8. application of volume revolution.
9. practical based on successive differentiation-  
(a) find the  $n^{\text{th}}$  derivative of the given function at a give point.  
(b) Application of Leibnitz's theorem
10. Evaluation of limits by L'Hospital's rule using Scilab/Matlab.
11. computation of limit, differentiation and integration of different kind of functions.
12. Application of Taylor's and Maclaurin theorem.
13. Application of partial derivatives.

Note: the above list may be changed annually with the approval of BUGS (Mathematics).

**Course Code: MTG 2.4**  
**Course Title: Differential equations**

**Theory : 60 Lectures**

*Theory Credit: 4*

*Practical Credit : 2*

- UNIT I     Differential equations and mathematical models. General, particular, explicit, implicit and singular solutions of a differential equation. Exact differential equations and integrating factors, separable equations and equations reducible to this form, linear equation and Bernoulli equations, special integrating factors and transformations.
- UNIT II     Introduction to compartmental model, exponential decay model, lake pollution model (case study of Lake Burley Griffin), drug assimilation into the blood (case of a single cold pill, case of a course of cold pills), exponential growth of population, limited growth of population, limited growth with harvesting.
- UNIT III     General solution of homogeneous equation of second order, principle of super position for homogeneous equation, Wronskian: its properties and applications.
- UNIT IV     Linear homogeneous and non-homogeneous equations of higher order with constant coefficients, Euler's equation, method of undetermined coefficients, method of variation of parameters.
- UNIT V     Equilibrium points, Interpretation of the phase plane, predatory-prey model and its analysis, epidemic model of influenza and its analysis, battle model and its analysis.

## Practical: 60 Lectures

*Practical Credit: 2*

List of Practical (using any software)

1. Plotting of second order solution family of differential equation.
2. Plotting of third order solution family of differential equation.
3. Growth model (exponential case only).
4. Decay model (exponential case only).
5. Lake pollution model (with constant/seasonal flow and pollution concentration).
6. Case of single cold pill and a course of cold pills.
7. Limited growth of population (with and without harvesting).
8. Predatory-prey model (basic volterra model, with density dependence, effect of DDT, two prey one predator).
9. Epidemic model of influenza (basic epidemic model, contagious for life, disease with carriers).
10. Battle model (basic battle model, jungle warfare, long range weapons).
11. Plotting of recursive sequences.
12. Study the convergence of sequences through plotting.
13. Verify Bolzano-Weierstrass theorem through plotting of sequences and hence identify convergent subsequences from the plot.
14. Study the convergence/divergence of infinite series by plotting their sequences of partial sum.
15. Cauchy's root test by plotting  $n^{\text{th}}$  roots.
16. Ratio test by plotting the ratio of  $n^{\text{th}}$  and  $(n+1)^{\text{th}}$  term.

**Course Code: MTG 3.5**  
**Course Title: PDE and system of ODE**

**Theory: 60 Lectures**

*Theory Credit: 4*


*Practical Credit : 2*

- UNIT I      Partial Differential Equations – Basic concepts and Definitions, Mathematical Problems. First-Order Equations: Classification, Construction and Geometrical Interpretation. Method of Characteristics for obtaining General Solution of Quasi Linear Equations. Canonical Forms of First-order Linear Equations.
- UNIT II      Method of Separation of Variables for solving first order partial differential equations.  
Derivation of Heat equation, Wave equation and Laplace equation. Classification of second order linear equations as hyperbolic, parabolic or elliptic. Reduction of second order Linear Equations to canonical forms.
- UNIT III     The Cauchy problem, the Cauchy-Kowalewskaya theorem, Cauchy problem of an infinite string. Initial Boundary Value Problems, Semi-Infinite String with a fixed end, Semi-Infinite String with a Free end,
- UNIT IV      Equations with non-homogeneous boundary conditions, Non-Homogeneous Wave Equation. Method of separation of variables, Solving the Vibrating String Problem, Solving the Heat Conduction problem.
- UNIT V      Systems of linear differential equations, types of linear systems, differential operators, an operator method for linear systems with constant coefficients, Basic Theory of linear systems in normal form, homogeneous linear systems with constant coefficients: Two Equations in two unknown functions, The method of successive approximations, the Euler method, the modified Euler method, The Runge-Kutta method.

## Practical: 60 Lectures

*Practical Credit: 2*

List of Practicals (using any software)

- (i) Solution of Cauchy problem for first order PDE.
- (ii) Finding the characteristics for the first order PDE.
- (iii) Plot the integral surfaces of a given first order PDE with initial data.
- (iv) solution of wave equation  for the following associated conditions

$$(a) u(x,0) = f(x), u(x,1) = g(x), x \in \mathbb{R}, t \in \mathbb{R}$$

$$(b) u(x,0) = f(x), u(x,1) = g(x), u(x,0) = 0, x \in \mathbb{R}, t \in \mathbb{R}$$

$$(c) u(x,0) = f(x), u(x,1) = g(x), u(x,0) = 0, x \in \mathbb{R}, t \in \mathbb{R}$$

$$(d) u(x,0) = f(x), u(x,1) = g(x), u(x,0) = 0, x \in \mathbb{R}, t \in \mathbb{R}$$

*Recommended Books and References:*

1. Tyn Myint-U and Lokenath Debnath, *Linear Partial Differential Equations for Scientists and Engineers*, 4th edition, Springer, Indian reprint, 2006.
2. S.L. Ross, *Differential equations*, 3rd Ed., John Wiley and Sons, India, 2004.
3. Martha L Abell, James P Braselton, *Differential equations with MATHEMATICA*, 3<sup>rd</sup> Ed., ElsevierAcademicPress,2004.

**Course Code: MTG 4.5**  
**Course Title: Numerical Methods**

**Theory: 60 Lectures**

*Theory Credit: 4*

*Practical Credit : 2*

*Use of Scientific Calculator is allowed.*

- UNIT I      Algorithms, Convergence, Errors: Relative, Absolute, Round off, Truncation.
- UNIT II      Transcendental and Polynomial equations: Bisection method, Newton's method, Secant method. Rate of convergence of these methods.
- UNIT III     System of linear algebraic equations: Gaussian Elimination and Gauss Jordan methods. Gauss Jacobi method, Gauss Seidel method and their convergence analysis.
- UNIT IV     Interpolation: Lagrange and Newton's methods. Error bounds. Finite difference operators. Gregory forward and backward difference interpolation.
- UNIT V     Numerical Integration: Trapezoidal rule, Simpson's  $1/3^{\text{rd}}$  rule, Simpson's  $3/8^{\text{th}}$  rule, Boole's Rule. Midpoint rule, Composite Trapezoidal rule, Composite Simpson's rule. Ordinary Differential Equations: Euler's method. Runge-Kutta methods of orders two and four.

## Practical: 60 Lectures

*Practical Credits: 2*

List of Practicals (using any software)

- HÍ Calculate the sum  $\sum_{i=1}^N \frac{1}{i^2}$
- (ii) To find the absolute value of an integer.
  - (iii) Enter 100 integers into an array and sort them in an ascending order. (iv) Bisection Method.
  - (v) Newton Raphson Method.
  - (vi) Secant Method.
  - (vii) Regula Falsi Method.
  - (viii) LU decomposition Method.
  - (ix) Gauss-Jacobi Method.
  - (x) SOR Method or Gauss-Siedel Method.
  - (xi) Lagrange Interpolation or Newton Interpolation.
  - (xii) Simpson's rule.

*Note: For any of the CAS (Computer aided software) Data types-simple data types, floating datatypes, character data types, arithmetic operators and operator precedence, variables and constant declarations, expressions, input/output, relational operators, logical operators and logical expressions, control statements and loop statements, Arrays should be introduced to the students*



**Syllabus for  
B.Sc (Honours) Physics**

Three Year Degree Course Semester System

(Under new UGC CBCS guidelines)

**B.Sc. Physics HONOURS**

<b>Semester</b>	<b>Core Course (C)</b>	<b>Ability Enhancement Course (A)</b>	<b>Skilled Enhancement Course (S)</b>	<b>Discipline Specific Elective (D)</b>	<b>Generic Elective (G)</b>
<b>First</b>	PHC 1.1 Mathematical Physics I	EGA 1.3 English Communication			PHG 1.4 Mechanics
	PHC 1.2 Mechanics				
<b>Second</b>	PHC 2.1 Electricity and Magnetism	ESA 2.3 Environmental Studies			PHG 2.4 Electricity and Magnetism
	PHC 2.2 Waves and Optics				
<b>Third</b>	PHC 3.1 Mathematical Physics II		PHS 3.4 Electrical Circuit and Network		PHG 3.5 Thermal Physics and Statistical Mechanics
	PHC 3.2 Thermal Physics				
	PHC 3.3 Digital Systems and Applications				
<b>Fourth</b>	PHC4.1 Mathematical Physics III		PHS 4.4 Renewable Energy		PHG 4.5 Elements of Modern Physics
	PHC 4.2 Elements of Modern Physics				
	PHC 4.3 Analog Systems and Applications				
<b>Fifth</b>	PHC 5.1 Quantum Mechanics			PHD 5.3 Advance Mathematical Physics	
	PHC 5.2 Solid State Physics			PHD 5.4 Nuclear and Particle Physics	
<b>Sixth</b>	PHC 6.1 Electromagnetic Theory			PHD 6.3 Classical Dynamics	
	PHC 6.2 Statistical Mechanics			PHD 6.4 Astronomy and Astrophysics	
<b>No. of Courses</b>	14 (84)	2 (4)	2 (4)	4 (24)	4(24)



ST. JOSEPH'S COLLEGE (AUTONOMOUS)

Syllabus for Bachelor of Science (Honours)

PHYSICS DEPARTMENT

THREE YEAR DEGREE COURSE SEMESTER SYSTEM

(Under New UGC CBCS Guidelines)

SEMESTER	COURSE	COURSE NAME	COURSE CODE	CREDIT
I	Core 1	Mathematical Physics I (Theory)	PHC 1.1	4
		Mathematical Physics I (Practical)	PHC 1.1(P)	2
	Core 2	Mechanics (Theory)	PHC 1.2	4
		Mechanics (Practical)	PHC 1.2(P)	2
	Ability Enhancement Course	English Communication	ESA 1.3	2
Library Course	Mechanics (Theory)	PHC 1.1	4	
		Mechanics (Practical)	PHC 1.1 (P)	2
II	Core 2	Electricity and Magnetism (Theory)	PHC 2.1	4
		Electricity and Magnetism (Practical)	PHC 2.1 (P)	2
	Core 4	Waves and Optics (Theory)	PHC 2.2	4
		Waves and Optics (Practical)	PHC 2.2 (P)	2
	Ability Enhancement Course	Environmental Studies	ESA 2.3	2
Library Course	Electricity and Magnetism (Theory)	PHC 2.1	4	
		Electricity and Magnetism (Practical)	PHC 2.1 (P)	2
III	Core 5	Mathematical Physics II (Theory)	PHC 3.1	4
		Mathematical Physics II (Practical)	PHC 3.1 (P)	2
	Core 6	Thermal Physics (Theory)	PHC 3.2	4
		Thermal Physics (Practical)	PHC 3.2 (P)	2
	Core 7	Digital Systems and Applications (Theory)	PHC 3.3	4
		Digital Systems and Applications (Practical)	PHC 3.3 (P)	2
	Ability Enhancement Course	Linear Circuit and Networks (Theory)	PHC 3.4	2
Library Course	Thermal Physics and Statistical Mechanics (T)	PHC 3.2	4	
		Thermal Physics and Statistical Mechanics (P)	PHC 3.2 (P)	2
IV	Core 8	Mathematical Physics III (Theory)	PHC 4.1	4
		Mathematical Physics III (Practical)	PHC 4.1 (P)	2
	Core 9	Elements of Modern Physics (Theory)	PHC 4.2	4
		Elements of Modern Physics (Practical)	PHC 4.2 (P)	2
	Core 10	Analog Systems and Applications (Theory)	PHC 4.3	4
		Analog Systems and Applications (Practical)	PHC 4.3 (P)	2
	Ability Enhancement Course	Renewable Energy (Theory)	PHC 4.4	2
	Library Course	Elements of Modern Physics (Theory)	PHC 4.2	4
		Elements of Modern Physics (Practical)	PHC 4.2 (P)	2

V	Core II	Quantum Mechanics (Theory)	PHC 5.1	4
		Quantum Mechanics (Practical)	PHC 5.1 (P)	2
	Core III	Solid State Physics (Theory)	PHC 5.2	4
		Solid State Physics (Practical)	PHC 5.2 (P)	2
	Discipline specific Elective	Advanced Mathematical Physics-II (Theory)	PHD 5.3	6
	Nuclear and Particle Physics (Theory)	PHD 5.4	6	
VI	Core I	Electromagnetic Theory (Theory)	PHC 6.1	4
		Electromagnetic Theory (Practical)	PHC 6.1 (P)	2
	Core II	Statistical Mechanics (Theory)	PHC 6.2	4
		Statistical Mechanics (Practical)	PHC 6.2 (P)	2
	Discipline Specific Elective	Classical Dynamics	PHD 6.3	6
	Astronomy and Astrophysics	PHD 6.4	6	

# CORE COURSE

## SEMESTER-I

### PHC 1.1: MATHEMATICAL PHYSICS-I

Theory Credit: 4

Teaching Hours: 60

#### UNIT I

(12 Lectures)

##### Calculus-I

Recapitulation: Limits, continuity, average and instantaneous quantities, differentiation. Plotting functions, intuitive ideas of continuous, differentiable, etc. functions and plotting of curves. Approximation: Taylor and binomial series (statements only). First Order Differential Equations and Integrating Factor. Second Order differential equations: Homogeneous Equations with constant coefficients.

#### UNIT II

(12 Lectures)

##### Calculus-II

Wronskian and general solution. Statement of existence and Uniqueness Theorem for Initial Value Problems. Particular Integral.

Calculus of functions of more than one variable: Partial derivatives, exact and inexact differentials, Integrating factor, with simple illustration. Constraint Maximization using Lagrange Multipliers.

#### UNIT III

(12 Lectures)

##### Vector Calculus I

Recapitulation of vectors. Properties of vectors under rotations. Scalar product and its invariance under rotations. Vector product, Scalar triple product and their interpretations in terms of area and volume respectively. Scalar and Vector fields.

Vector Differentiation: Directional derivatives and normal derivative. Gradient of a scalar field and its geometrical interpretation. Divergence and curl of a vector field. Del and Laplacian operators. Vector identities.

#### UNIT IV

(12 Lectures)

##### Vector Calculus II

Vector Integrals: Ordinary Integrals of Vectors, Multiple integrals, Surface. Notion of differential line, surface and volume elements. Line, surface and volume integrals of Vector fields. Flux of a vector field. Gauss' divergence theorem, Green's and Stokes Theorems and their applications (one system proof).

#### UNIT V

(12 Lectures)

##### Orthogonal Curvilinear Coordinates and Dirac Delta function

Orthogonal Curvilinear Coordinates. Derivatives of Gradient, Divergence, Curl and Laplacian in Cartesian, Spherical and Cylindrical Coordinates Systems.

Definition of Dirac delta function. Representation as limit of a Gaussian function and rectangular function. Properties of Dirac delta function.

## REFERENCE BOOKS:

1. Mathematical Methods for Physicists, G. B. Arfken, H.J. Weber, F.E. Harris, 2013, 7th Edition, Elsevier
2. An introduction to ordinary differential equations, E.A. Coddington, 2009, PHI Learning
3. Differential Equations, George F. Simmons, 2007, McGraw Hill
4. Mathematical Tools for Physics, James Stewart, 2010, Dover Publications
5. Mathematical methods for Scientists and Engineers, G. A. McQuarrie, 2013, Viva Book
6. Advanced Engineering Mathematics, D.C. Zill and W.S. Wright, 5 Ed., 2012, Jones and Bartlett Learning
7. Mathematical Physics, Greenwood, 1st edition, Cengage Learning
8. Engineering Mathematics, S.Pal and S.C. Bhunia, 2015, Oxford University Press
9. Advanced Engineering Mathematics, Erwin Kreyszig, 2008, Wiley India
10. Essential Mathematical Methods, K.P.Hiley&M.P.Holtom, 2011, Cambridge Univ. Press

**Practical Credit: 2**

**Teaching Hours: 40**

The aim of this Lab is not just to teach computer programming and numerical analysis but to introduce its role in solving problems in Physics.

- Highlight the use of computational methods to solve physical problems
- The course will consist of lectures, fresh theory and practically in the Lab
- Evaluation done not on the programming but on the basis of formulating the problem
- Aim at enabling students to construct the computational problems to be solved
- Students can use any one operating system Linux or Microsoft Windows

Topics	Description with Applications
Introduction and Overview	Computer architecture and organization, memory and I/O techniques devices
Basics of scientific computing	Binary and decimal arithmetic, Floating point numbers, algorithms, Sequence, Selection and Repetition, single and double precision arithmetic, underflow & overflow emphasize the importance of solving equations in terms of dimensionless variables, iterative methods
Errors and error Analysis	Truncation and round off errors, Absolute and relative errors, Floating point computations
Review of C & C++ Programming Paradigms	Introduction to Programming, constants, variables and data types, operators and Expressions, I/O statements, read and print, $\backslash n$ and $\backslash t$ , Manipulators for data formatting, Control statements (selection making and looping statements) (if statement, if-else statement, Nested if Statement, else if Statement, Ternary Operator, Case Statement, Switch Statement, Conditional and Conditional Looping, While Loop, Do While Loop, FOR Loop, Break and Continue Statements, Nested Loops, Arrays (1D & 2D) and strings, user defined functions, Structures and Unions, Men of classes and objects
Programs	Sum & average of a list of numbers, largest of a given list of numbers and its location in the list, sorting of numbers in ascending descending order, Maximum minimum and range of numbers, addition, multiplication and inverse of matrix, solution of quadratic equation, solution of simultaneous equations, values of sine, cosine and exponential function using their series expansion
Random number generation	Area of circle, area of square, volume of sphere, value of pi etc
Solution of Algebraic and Transcendental equations by Iteration, Newton Raphson	Solution of linear and quadratic equations, solving

and Secant methods	$n = \tan \theta$ , $t = \frac{1}{\mu} \left( \frac{\mu \mu \mu}{\mu} \right)^2$ in optics
Interpolation by Newton Gregory Forward and Backward difference formulae, Error estimation of linear interpolation	Evaluation of trigonometric functions e.g. $\sin \theta$ , $\cos \theta$ , $\tan \theta$ , etc.
Numerical differentiation (Forward and Backward difference formulae) and Integration (Trapezoidal and Simpson rules), Monte Carlo method	Given Position with equidistant time data to calculate velocity and acceleration and vice versa. Find the area of B-H Hysteresis loop
Solution of Ordinary Differential Equations (ODE) First order Differential equation Euler, modified Euler and Runge-Kutta (RK) second and fourth order methods	Inductive decay Current in RC, LC circuits with DC source Newton's law of cooling Classical equations of motion Accept following problems using RK 4 order method

### REFERENCE BOOKS

1. Introduction to Numerical Analysis, S.S. Sastry, 5th Edn., 2012, PHI Learning Pvt. Ltd.
2. Schaum's Outline of Programming with C++ 1, Hartbard, 2000, McGraw-Hill Pub.
3. Numerical Recipes in C: The Art of Scientific Computing, W.H. Press et al., 3rd Edn., 2007, Cambridge University Press
4. A first course in Numerical Methods, U.M. Ascher & C. Greif, 2012, PHI Learning
5. Elementary Numerical Analysis, K.F. Atkinson, 3<sup>rd</sup> Edn., 2007, Wiley India Edition
6. Numerical Methods for Scientists & Engineers, R.W. Hamming, 1973, Courier Dover Pub
7. An Introduction to computational Physics, F.Pang, 2nd Edn., 2006, Cambridge Univ. Press
8. Computational Physics, Darren Walker, 1st Edn., 2015, Scientific International Pvt. Ltd.

## PHC 12: MECHANICS

Theory Credit: 4

Teaching Hours: 60

### UNIT I

(12 Lectures)

#### Fundamentals of Dynamics

Reference frames, Inertial frames, Review of Newton's Laws of Motion, Galilean invariance, Galilean invariance, Momentum of variable-mass systems: motion of rocket, Motion of a projectile in uniform gravitational field Dynamics of a system of particles, Centre of Mass, Principle of conservation of momentum, impulse.

Work and Energy: Work and Kinetic Energy Theorem, Conservative and non-conservative forces, Potential Energy, Energy diagram, Stable and unstable equilibrium, Elastic potential energy, Force as gradient of potential energy, Work & Potential energy, Work done by non-conservative forces, Law of conservation of energy, Collisions, Elastic and inelastic collisions between particles, Centre of Mass and Laboratory frame.

### UNIT II

(12 Lectures)

#### Rotational Dynamics

Angular momentum of a particle and system of particles, Torque, Principle of conservation of angular momentum, Rotation about a fixed axis, Moment of Inertia, Calculation of moment of inertia for rectangular, cylindrical and spherical bodies, Kinetic energy of rotation, Motion involving both translation and rotation.

Elasticity: Relation between Elastic constants, Twisting torque on a Cylinder or Wire.

Fluid Motion: Continuity of Moving Fluids, Poiseuille's Equation for Flow of a Liquid through a Capillary Tube.

### UNIT III

(12 Lectures)

#### Gravitation and Central Force Motion

Law of gravitation, Gravitational potential energy, Inertial and gravitational mass, Potential and field due to spherical shell and solid sphere.

Motion of a particle under a central force field, Two-body problem and its reduction to one-body problem and its solution, The energy equation and energy diagram, Kepler's Laws, Satellite in circular orbit and applications, Geosynchronous orbits, Weightlessness, Basic idea of global positioning system (GPS).

### UNIT IV

(12 Lectures)

#### Oscillations

**SIM:** Simple Harmonic Oscillations, Differential equation of SHM and its solution, Kinetic energy, potential energy, total energy and time-averaged values, Damped oscillation, Forced oscillations, Transient and steady state, Resonance, sharpness of resonance, power dissipation and Quality Factor.

**Non-Inertial Systems:** Non-inertial frames and fictitious forces, Uniformly rotating frame, Laws of Physics in rotating non-inertial systems, Centrifugal force, Coriolis force and its applications, Components of Velocity and Acceleration in Cylindrical and Spherical Coordinate Systems.

### UNIT V

(12 Lecture)

#### Special Theory of Relativity

Michelson-Morley Experiment and its outcome, Postulates of Special Theory of Relativity, Lorentz Transformation, Simultaneity and order of events, Lorentz contraction, Time dilation, Relativistic



transformation of velocity, frequency and wave number. Relativistic addition of velocities. Variation of mass with velocity. Mass-energy Equivalence. Relativistic Doppler effect. Relativistic Kinematics. Transformation of Energy and Momentum. Energy-Momentum four vectors.

### REFERENCE BOOKS:

1. An introduction to mechanics, D. Kleppner, R.J. Kolenkow, 1973, McGraw-Hill
2. Mechanics, Berkeley Physics, vol I, C.Kittel, W. Knight, et al. 2007, Tata McGraw-Hill
3. Physics, Resnick, Halliday and Walker 8e, 2008, Wiley
4. Analytical Mechanics, G.R. Fowles and G.L. Cassiday, 2009, Cengage Learning.
5. Feynman Lectures, Vol. I, R.P. Feynman, R.H. Leighton, M. Sands, 2006, Pearson Education
6. Introduction to Special Relativity, R. Resnick, 2006, John Wiley and Sons.
7. University Physics, Ronald Lane Huey, 2003, Thomson Brooks/Cole.

### Additional Books for Reference

1. Mechanics, D.S. Mathur, S. Chand and Company Limited, 2000
2. University Physics, F.W. Sears, M.W. Zemansky, H.D. Young 13e, 1986, Addison Wesley
3. Physics for scientists and Engineers with Modern Phys., J.W. Jewett, R.A. Serway, 2010, Cengage Learning
4. Theoretical Mechanics, M.H. Spiegel, 2006, Tata McGraw-Hill

### Practical Credit:2

Teaching Hours: 60

1. Measurements of length (or diameter) using Vernier caliper, screw gauge and travelling microscope.
2. To study the random error in observations.
3. To determine the height of a building using a Sextant.
4. To study the Motion of Spring and calculate (a) Spring constant, (b)  $g$  and (c) Modulus of rigidity.
5. To determine the Moment of Inertia.
6. To determine  $g$  and velocity for a freely falling body using Digital Timing Technique.
7. To determine Coefficient of Viscosity of water by Capillary Flow Method (Poiseuille's method).
8. To determine the Young's Modulus of a Wire.
9. To determine the Modulus of Rigidity.
10. To determine the elastic Constants of a wire by Searle's method.
11. To determine the value of  $g$  using Bar Pendulum.
12. To determine the value of  $g$  using Kater's Pendulum.

### REFERENCE BOOKS:

1. Advanced Practical Physics for students, B. L. Hart and H.T. Worsnop, 1973, Asia Publishing House
2. Advanced level Physics Practical, Michael Nelson and Ann M. Oghorn, 4th Edition, reprinted 1987, Heinemann Educational Publishers
3. A Year Book of Practical Physics, I. Prakash & Ramakrishna, 11th Edn, 2011, Kitab Mahal
4. Engineering Practical Physics, S. Paraghat & B. Mallick, 2015, Cengage Learning India Pvt. Ltd.
5. Practical Physics, G.L. Squires, 2015, 4th Edition, Cambridge University Press.

## SEMESTER-II

### PHC 21/ELECTRICITY AND MAGNETISM

Theory Credit:4

Teaching Hours: 60

#### UNIT I

(12 Lecture)

##### Electric Field and Electric Potential

Electric field: Electric field lines, Electric flux, Gauss' Law with applications to charge distributions with spherical, cylindrical and plane symmetry.

Conservative nature of Electrostatic Field, Electrostatic Potential, Laplace's and Poisson equations, The Uniqueness Theorem, Potential and Electric Field of a dipole, Force and Torque on a dipole.

#### UNIT II

(15 Lecture)

Electrostatic energy of system of charges, Electrostatic energy of a charged sphere, Conductors in an electrostatic field, Surface charge and force on a conductor, Capacitance of a system of charged conductors, Parallel-plate capacitor, Capacitance of an isolated conductor, Method of images and its application to (1) Plane infinite sheet and (2) Sphere.

**Dielectric Properties of Matter:** Electric field in matter, Polarization, Polarization Charges, Electrical Susceptibility and Dielectric Constant, Capacitor (parallel plate, spherical, cylindrical) filled with dielectric, Displacement vector  $D$ , Relations between  $E$ ,  $P$  and  $D$ , Gauss' Law in dielectrics.

#### UNIT III

(12 Lecture)

##### Magnetic Field

Magnetic force between current elements, and definition of Magnetic field  $B$ , Biot-Savart's Law and its simple applications: straight wire and circular loop, Current Loop as a Magnetic Dipole and its Dipole Moment (Analogy with Electric Dipole), Ampere's Circuital Law and its application to (1) Solenoid and (2) Toroid, Properties of  $B$ : curl and divergence, Vector Potential, Magnetic Force on (1) point charge (2) current carrying wire (3) between current elements, Torque on a current loop in a uniform Magnetic Field.

#### UNIT IV

(9 Lecture)

##### Magnetic Properties of Matter

Magnetization vector ( $M$ ), Magnetic Intensity( $H$ ), Magnetic susceptibility and permeability, Relation between  $B$ ,  $H$ ,  $M$ , Ferromagnetism,  $B-H$  curve and hysteresis.

**Electromagnetic Induction:** Faraday's Law, Lenz's Law, Self Inductance and Mutual Inductance, Reciprocity Theorem, Energy stored in a Magnetic Field, Introduction to Maxwell's Equations, Charge Conservation and Displacement current.

#### UNIT V

(12 Lecture)

##### Electrical Circuits

AC Circuits: Kirchhoff's laws for AC circuits, Complex Resistance and Impedance, Series LCR Circuit (1) Resonance, (2) Power Dissipation and (3) Quality Factor, and (4) Band Width, Parallel LCR Circuit.

**Network theorems:** Ideal Constant-voltage and Constant-current Sources, Network Theorems: Thevenin circuit, Norton theorem, Superposition theorem, Reciprocity theorem, Maximum Power Transfer theorem, Applications to dc circuits.

**Ballistic Galvanometer:** Torque on a current Loop, Ballistic Galvanometer: Current and Charge Sensitivity, Electromagnetic damping, Logarithmic damping, CDM.

## REFERENCE BOOKS:

- Electricity, Magnetism & Electromagnetic Theory, S. Mahajan and Choudhury, 2012, Tata McGraw
- Electricity and Magnetism, Edward M. Purcell, 1986 McGraw-Hill Education
- Introduction to Electrodynamics, D.J. Griffiths, 3rd Edn., 1998, Benjamin Cummings.
- Feynman Lectures Vol.2, R.P Feynman, R.B Leighton, M. Sands, 2008, Pearson Education
- Elements of Electromagnetics, M.N.G. Sadiku, 2010, Oxford University Press.
- Electricity and Magnetism, J.H Fowles&J Yarnood, Vol. 1, 1989, Oxford Univ. Press

## **Practical Credit: 2**

**Teaching Hours: 60**

1. Use a Multimeter for measuring (a) Resistance, (b) AC and DC Voltages, (c) DC Current, (d) Capacitance, and (e) Checking electrical lines.
2. To study the characteristics of a series RC Circuit.
3. To determine an unknown Low Resistance using Potentiometer.
4. To determine an unknown Low Resistance using Carey Foster's Bridge.
5. To compare capacitances using De'Sauty's bridge.
6. Measurement of field strength B and its variation in a solenoid (determine dB/dx)
7. To verify the Thevenin and Norton theorems.
8. To verify the Superposition, and Maximum power transfer theorems.
9. To determine self inductance of a coil by Anderson's bridge
10. To study response curve of a Series LCR circuit and determine its (a) Resonant frequency, (b) Impedance at resonance, (c) Quality factor Q, and (d) Band width.
11. To study the response curve of a parallel LCR circuit and determine its (a) Anti resonance frequency and (b) Quality factor Q.
12. Measurement of charge and current sensitivity and CIR of Ballistic Galvanometer
13. Determine a high resistance by leakage method using Ballistic Galvanometer
14. To determine self inductance of a coil by Hayling's method
15. To determine the mutual inductance of two coils by Absolute method.

## REFERENCE BOOKS:

- Advanced Practical Physics for students, B.L. Flint and H.T. Worsnop, 1971, Asia Publishing House
- Advanced level Physics Practicals, Michael Nelson and Jon M. Oghion, 4th Edition, reprinted 1983, Heinemann Educational Publishers
- Engineering Practical Physics, S. Panigrahi and H. Mallick, 2015, Cengage Learning.
- A Laboratory Manual of Physics for undergraduate classes, D. P. Khandelwal, 1985, Vani Pub

## PHC 2.2: WAVES AND OPTICS

Theory Credit: 4

Teaching Hours: 6B

### UNIT I

(17 Lectures)

**Linearity and Superposition Principle:** Superposition of two collinear oscillations having (1) equal frequencies and (2) different frequencies (Beats).

**Superposition of two perpendicular Harmonic Oscillations:** Graphical and Analytical Methods. Lissajous Figures with equal or unequal frequency and their uses.

**Wave Motion-General:** Transverse waves on a string. Travelling and standing waves on a string. Normal modes of a string. Group Velocity, Phase Velocity. Plane waves, Spherical waves, Wave velocity.

### UNIT II

(13 Lectures)

**Fluids:** Surface Tension: Spherulatic and aspherical surface. Excess of pressure. Application to spherical and cylindrical drops and bubbles. Variation of surface tension with temperature. Jurin's method.

**Viscosity:** Viscosity- Rise of liquid in a capillary tube- Poiseuille's formula- Determination of coefficient of viscosity of a liquid. Variation of viscosity of a liquid with temperature. Lubrication. Physics of low pressure: production and measurement of low pressure: Rotary pump, Diffusion pump, Molecular pump- Knudsen absolute gauge- pressure and Pirani gauge. Detection of leakage.

**Sound:** Simple harmonic motion- forced vibrations and resonance- Fourier's Theorem. Application of saw tooth wave and square wave. Intensity and loudness of sound. Decibels. Intensity levels, musical notes, musical scale. Acoustics of buildings. Reverberation and time of reverberation. Absorption coefficient. Sabine's formula. Measurement of reverberation time. Acoustic aspects of halls and auditoria.

### UNIT III

(12 Lectures)

**Wave Optics:** Electromagnetic nature of light. Diffraction and properties of wave front. Huygen's Principle. Temporal and Spatial Coherence.

**Interference:** Division of amplitude and wavefront. Young's double slit experiment, Lloyd's Mirror and Fresnel's Bi-Prism. Phase change on reflection. Stokes' treatment. Interference in Thin Films: parallel and wedge-shaped films. Fringes of equal inclination (Haidinger Fringes), Fringes of equal thickness (Fresnel Fringes), Newton's Rings. Measurement of wavelength and refractive index.

### UNIT IV

(11 Lectures)

**Interferometer:** Michelson Interferometer (1) Idea of horns of fringes (See theory material), (2) Determination of Wavelength, (3) Wavelength Difference, (4) Refractive Index, and (5) Visibility of fringes. Fabry-Perot interferometer.

**Diffraction:** Kirchhoff's Integral Theorem, Fresnel Kirchhoff's Integral formula. (Qualitative discussion only) (2 Lectures)

Fraunhofer diffraction: Single slit, Circular aperture, Resolving Power of a telescope, Double slit, Multiple slit, Diffraction grating, Resolving power of grating.

### UNIT V

(12 Lectures)

**Fresnel Diffraction:** Fresnel's Assumptions, Fresnel's Half Period Zones for Plane Wave. Explanation of Rectilinear Propagation of Light. Theory of a Zone Plate. Multiple Foci of a Zone Plate. Fresnel's Integral. Fresnel diffraction pattern of a straight edge, a slit and a wire.

**Polarisation:** Transverse nature of light waves. Plane polarised light- production and analysis. Circular and elliptical polarisation.

## REFERENCE BOOKS

1. Waves, Berkeley Physics Course, vol. 3, Francis Crawford, 2007, Tata McGraw Hill.
2. Fundamentals of Optics, F.A. Jenkins and H.E. White, 1981, McGraw Hill
3. Principles of Optics, Max Born and Emil Wolf, 7th Edn., 1999, Pergamon Press.
4. Optics, AjayGhatik, 2008, Tata McGraw Hill
5. The Physics of Vibrations and Waves, H. J. Pain, 2013, John Wiley and Sons
6. The Physics of Waves and Oscillations, S.K. Bajaj, 1998, Tata McGraw Hill.
7. Fundamental of Optics, A. Kumar, H.R. Gohari and D.R. Khanna, 2011, R. Clound Publications.

## **Practical Credit: 2**

## **Teaching Hours: 60**

1. To determine the frequency of an electric tuning fork by Melde's experiment and verify  $\lambda L = T$  law.
2. To investigate the motion of coupled oscillators.
3. To study Lissajous Figures.
4. Kundt's tube experiment.
5. Familiarization with Scheuster's lensing; determination of angle of prism
6. To determine refractive index of the Material of a prism using sodium source.
7. To determine the dispersive power and Cauchy constants of the material of a prism using mercury source.
8. To determine the wavelength of sodium source using Michelson's interferometer.
9. To determine wavelength of sodium light using Fresnel Bi-prism.
10. To determine wavelength of sodium light using Newton's Rings.
11. To determine the thickness of a thin paper by measuring the width of the interference fringes produced by a wedge-shaped film.
12. To determine wavelength of (i) Na source and (ii) spectral lines of Hg source using plane diffraction grating.
13. To determine dispersive power and resolving power of a plane diffraction grating.

## REFERENCE BOOKS

- Advanced Practical Physics for students, B.L. Flint and H.E. Worzup, 1971, Asia Publishing House
- A Text Book of Practical Physics, I. Prakash & Ramakrishna, 11th Ed., 2011, Kitab Mahal
- Advanced level Physics Practicals, Michael Nelson and Jon M. Cribben, 4th Edition, copyright 1985, Heinemann Educational Publishers
- A Laboratory Manual of Physics for undergraduate classes, D.P. Khasturwal, 1983, Vani Pub.

## SEMESTER –III

### PHC 3.1: MATHEMATICAL PHYSICS-II

Theory Credit: 4

Teaching Hours: 60

#### UNIT I

(12 Lectures)

**Fourier Series:** Periodic functions, Orthogonality of sine and cosine functions, Dirichlet conditions (Sturmans only). Expansion of periodic functions in a series of sine and cosine functions and determination of Fourier coefficients. Complex representation of Fourier series. Expansion of functions with arbitrary period. Expansion of non-periodic functions over an interval. Even and odd functions and their Fourier expansions. Application. Summation of infinite Series. Term-by-term differentiation and integration of Fourier Series. Parseval Identity.

#### UNIT II

(12 Lectures)

**Frobenius Method and Special Functions:** Singular Points of Second Order Linear Differential Equations and their importance. Frobenius method and its applications to differential equations. Legendre, Bessel, Hermite and Laguerre Differential Equations.

#### UNIT III

(12 Lectures)

**Properties of Legendre Polynomials:** Rodrigues Formula, Generating Function, Orthogonality, Simple recurrence relations. Expansion of function in a series of Legendre Polynomials. Bessel Functions of the First Kind, Generating Function, simple recurrence relations, Zeros of Bessel Functions ( $J_0(x)$  and  $J_1(x)$ ) and Orthogonality.

#### UNIT IV

(10 Lectures)

**Some Special Integrals:** Beta and Gamma Functions and Relation between them. Expression of integrals in terms of Gamma Functions. Error Function (Probability Integral).

**Theory of Errors:** Systematic and Random Errors. Propagation of Errors. Normal Law of Errors. Standard and Probable Error. Least squares fit. Error on the slope and intercept of a fitted line.

#### UNIT V

(14 Lectures)

**Partial Differential Equations:** Solutions to partial differential equations, using separation of variables. Laplace's Equation in problems of rectangular, cylindrical and spherical symmetry. Wave equation and its solution for vibrational modes of a stretched string, rectangular and circular membranes. Diffusion Equation.

#### REFERENCE BOOKS:

- Mathematical Methods for Physicists: Arthur Welfer, 2005, Harra, Elsevier.
- Fourier Analysis by M.R. Spiegel, 2004, Tata McGraw Hill.
- Mathematics for Physicists, Susan M. Lea, 2004, Thomson Brooks/Cole.
- Differential Equations, George T. Simmons, 2006, Tata McGraw Hill.
- Partial Differential Equations for Scientists & Engineers, S.J. Farlow, 1993, Dover Pub.
- Engineering Mathematics, S.Pal and S.C. Bhunia, 2015, Oxford University Press.
- Mathematical methods for Scientists & Engineers, D.A. McQuarrie, 2001, Viva Books.

Topic	Description with Applications
Introduction to Numerical computation Software Scilab/SCIENTIFIC/ C++ Matlab / Mathematics	Introduction to Scilab/ OREGON/C++ / Matlab/Mathematics. Advantages and disadvantages.
Curve fitting, Least square G, Gradient of G, standard deviation	Ohm's law to calculate R, Hook's law to calculate spring Constant
Solution of Linear system of equations by Gauss elimination method and Gauss Seidel method. Diagonalization of matrices, Inverse of a matrix, Eigen vectors, eigen values problems	Solution of mesh equations of electric circuits (1 mark) Solution of coupled spring mass system (2 marks)
Generation of Special functions using User defined functions in Scilab	Generating and plotting Legendre Polynomials Generating and plotting Bessel functions
Solution of ODE First order Differential equations Euler, modified Euler and Runge- Kutta second order methods Second order differential equations Fixed difference method	First order differential equation Radioactive decay, Current in RC, LC circuits with DC source, Newton's law of cooling, Classical equations of motion Second order Differential Equation, Harmonic oscillator (no friction), Damped Harmonic oscillator, Over damped, Critical damped, Oscillatory, Forced Harmonic oscillator, Transient and Steady state solution Apply above to LCR circuits also.
Partial differential equations	Partial Differential Equation Wave equation, Heat equation, Poisson equation, Laplace equation

## REFERENCE

1. Mathematical Methods for Physics and Engineers, R.F Biley, M.P. Hobson and S. J. Durrant, 3rd ed., 2006, Cambridge University Press.
2. Complex Variables, A.S. Fokas & M.E. Ashpazz, 9th Ed., 2011, Cambridge Univ. Press.
3. First course in complex analysis with applications, D.G. Zill and P.D. Stangor, 1988, Jones & Bartlett Computational Physics, D.Walken, 1st Edn., 2003, Scientific International Pvt. Ltd.
4. A Guide to MATLAB, R.R. Hunt, R.L. Lipsman, J.M. Rosenberg, 2014, 3rd Edn., Cambridge University Press.
5. Simulation of ODE/PDE Models with MATLAB®, OCTAVE and SCILAB: scientific and Engineering Ing Applications, A.V. Wazwaz, P. Sauer, C.V. Fernandez, 2014 Springer.
6. Scilab-by example: M. Abbad 2002, ISBN: 978-1479280404
7. Scilab: A free software to Matlab: H. Batachchan, A.S.Nair, 2011 S Chand & Company
8. Scilab Image Processing, Lambert M. Saitane, 2009, Benacript Publishing  
[www.scilab.in/textbook\\_computational/general\\_book/294](http://www.scilab.in/textbook_computational/general_book/294)

## PHIC 12: THERMAL PHYSICS

Theory Credit:4

Teaching Hours: 60

### UNIT I

(15 Lecture)

#### Introduction to Thermodynamics:

**Zeroth and First Law of Thermodynamics:** Extensive and intensive Thermodynamic Variables, Thermodynamic Equilibrium, Zeroth Law of Thermodynamics & Concept of Temperature, Concept of Work & Heat, State Functions, First Law of Thermodynamics and its differential form, Internal Energy, First Law & various processes, Applications of First Law: General Relation between CP and CV, Work Done during Isothermal and Adiabatic Processes, Compressibility and Expansion Co-efficient.

**Second Law of Thermodynamics:** Reversible and Irreversible process with examples, Conversion of Work into Heat and Heat into Work, Heat Engines, Carnot's Cycle, Carnot engine & efficiency, Refrigerator & coefficient of performance, 2nd Law of Thermodynamics: Kelvin Planck and Clausius Statements and their Equivalences, Carnot's Theorem, Applications of Second Law of Thermodynamics, Thermodynamic Scale of Temperature and its Equivalence to Perfect Gas Scale.

### UNIT II

(12 Lecture)

**Entropy:** Concept of Entropy, Clausius Theorem, Clausius Inequality, Second Law of Thermodynamics in terms of Entropy, Entropy of a perfect gas, Principle of Increase of Entropy, Entropy Changes in Reversible and Irreversible processes with examples, Entropy of the Universe, Entropy Changes in Reversible and Irreversible Processes, Principle of Increase of Entropy, Temperature-Entropy diagram for Carnot's Cycle, Third Law of Thermodynamics, Unattainability of Absolute Zero.

**Thermodynamic Potentials:** Thermodynamic Potentials: Internal Energy, Enthalpy, Helmholtz Free Energy, Gibbs's Free Energy, Their Definitions, Properties and Applications.

### UNIT III

(12 Lecture)

**Maxwell's Thermodynamic Relations:** Derivations and applications of Maxwell's Relations, Maxwell's Relations: (1) Classical Clapeyron equation, (2) Values of  $C_p - C_v$ , (3) TDS Equations, (4) Joule Kelvin coefficient for Ideal and Van der Waal Gases, (5) Energy equations, (6) Change of Temperature during Adiabatic Process.

**Phase Transition:** First and second order Phase Transitions with examples, Classical Clapeyron Equation and Ehrenfest equations.

### UNIT IV

(11 Lecture)

#### Kinetic Theory of Gases:

**Distribution of Velocities:** Maxwell-Boltzmann Law of Distribution of Velocities in an Ideal Gas and its Experimental Verifications, Doppler Broadening of Spectral Lines and Stern's Experiment, Mean, RMS and Most Probable Speeds, Degree of Freedom, Law of Equipartition of Energy (No proof required), Specific heats of Gases.

**Molecular Collisions:** Mean Free Path, Collision Probability, Estimates of Mean Free Path, Transport Phenomena in Ideal Gases: (1) Viscosity, (2) Thermal Conductivity and (3) Diffusion, Brownian Motion and its Significance.

### UNIT V

(10 Lecture)

**Real Gases:** Behavior of Real Gases: Deviations from the Ideal Gas Equation, The Virial Equation, Andrews's Experiments on CO<sub>2</sub> Gas, Critical Constants, Coexistence of Liquid and Gaseous State, Vapor and Gas, Boyle Temperature, Van der Waal's Equation of State for Real Gases, Values of Critical Constants, Law of Corresponding States, Comparison with Experimental Curves, P-V Diagrams, Joule's Experiment, Free Adiabatic Expansion of a Perfect Gas, Joule-Thomson Process, Plug Experiment, Joule-Thomson Effect for Real and Van der Waal Gases, Temperature of Inversion, Joule-Thomson Cooling.



## REFERENCE BOOKS:

1. Heat and Thermodynamics, M.W. Zemansky, Richard Dittman, 1961, McGraw-Hill.
2. A Treatise on Heat, MeghnadSaha, and B.N.Srivastava, 1958, Indian Press
3. Thermal Physics, S. Garg, R. Bansal and Ghosh, 2nd Edition, 1993, Tata McGraw-Hill
4. Modern Thermodynamics with Statistical Mechanics, Carl S. Hellick, 2009, Springer
5. Thermodynamics, Kinetic Theory & Statistical Thermodynamics, Sears & Salinger, 1992, Narosa.
6. Concepts in Thermal Physics, S.J. Blundell and K.M. Blundell, 2nd Ed., 2012, Oxford University Press.
7. Thermal Physics, A. Kumar and S.P. Taraja, 2014, R. Chand Publications.

**Practical Credit: 2**

**Teaching Hours: 60**

1. To determine Mechanical Equivalence of Heat, J. by Joule's / Callender and Barre's constant flow method
2. To determine the Coefficient of Thermal Conductivity of Cu by Searle's Apparatus or any suitable method.
3. To determine the coefficient of linear expansion by optical lever method or any other suitable method
4. To determine the Coefficient of Thermal Conductivity of a bad conductor by Lee and Charlton's disc method or any suitable method
5. To determine the Temperature Coefficient of Resistance by Platinum Resistance Thermometer (PRT)
6. To study the variation of resistance with temperature by Carry-Foster bridge and hence determine the temperature coefficient of the material using hotplate.
7. To study the variation of Thermo-coef of a Thermocouple with Difference of Temperature of its Two Junctions
8. To calibrate a thermocouple or measure temperature in a specified Range using: 1) Null Method, 2) Direct measurement using Op-Amp difference amplifier and to determine Neutral Temperature

## REFERENCE BOOKS

1. Advanced Practical Physics for students, H. L. Fitt and H.E. Worsnop, 1971, Asia Publishing House
2. A Text Book of Practical Physics, (Prakash & Ramakrishna, 11th Ed., 2011), Kitab Mahal
3. Advanced level Physics Practicals, Michael Nelson and Ian M. Optarm, 4th Edition, reprinted 1985, Heinemann Educational Publishers.
4. A Laboratory Manual of Physics for undergraduate classes, D.P.Khandelwal,1985, Vaidi Pub.

## PHC 13 DIGITAL SYSTEMS AND APPLICATIONS

Theory Credit: 4

Teaching Hours: 60

### UNIT I

(13 Lecture)

**Introduction to CRO:** Block Diagram of CRO, Electronic Gun, Deflection System and Time Base, Deflection Sensitivity, Applications of CRO (i) Study of Waveforms, (ii) Measurement of Voltage, Current, Frequency, and Phase Difference.

**Integrated Circuits** (Qualitative treatment only): Active & Passive components, Discrete components, Wafer, Chip, Advantages and drawbacks of ICs, Scale of Integration, SSI, MSI, LSI and VLSI (basic idea and definitions only), Classification of ICs, Examples of Linear and Digital ICs  
**Digital Fundamentals:** Binary, Octal and Hexadecimal number systems and their inter conversion, Binary arithmetic (addition, subtraction, multiplication and division) 1's and 2's complement.

**Basic Logic gates:** OR, AND, NOT, NOR, NOR, NAND, positive and negative logic

### UNIT II

(11 Lecture)

**Boolean algebra:** De Morgan's Theorems, Boolean Laws, Simplification of Logic Circuit using Boolean Algebra, Fundamental Products, Idea of Minterms and Maxterms, Conversion of a Truth table into Equivalent Logic Circuit by (1) Sum of Products Method and (2) Karnaugh Map.

**Arithmetic Circuits:** Binary Addition, Binary Subtraction using 2's Complement, Half and Full Adder, Half & Full Subtractors, 4 bit Binary Adder/Subtractor.

### UNIT III

(13 Lecture)

**Data processing circuits:** Basic idea of Multiplexers, De-multiplexers, Decoders, Encoders.

**Sequential Circuits:** SR, D, and JK Flip Flops, Clocked Level and Edge Triggered Flip Flops, Preset and Clear operations, Race around condition in JK Flip Flop, MS JK Flip Flop.

**Counters (4 bits):** Ring Counter, Asynchronous counter, Decade Counter, Synchronous Counter.

### UNIT IV

(11 Lecture)

**Timers:** 555, Basic circuit and applications, Astable multivibrator and Monostable multivibrator.

**Shift registers:** Serial-in-Serial-out, Serial-in-Parallel-out, Parallel-in-Serial-out and Parallel-in-Parallel-out Shift Registers (only up to 4 bits)

**Computer Organization:** Input/Output Devices, Data storage (idea of RAM and ROM), Computer memory, Memory organization & addressing, Memory interfacing, Memory Map.

### UNIT V

(12 Lecture)

**Converter circuits:** D/A converters, A/D converters, clipping and clamping, astable, monostable and bistable multivibrators using transistors.

**Digital Logic Families:** Introduction and performance criteria for logic families, various logic families: DCTL, RTL, TTL and ECL, working and characteristics features, Saturated and non-saturated, fan in and fan out, CMOS gates and CMOS gate, comparison of various logic families.

### REFERENCE BOOKS:

1. Digital Principles and Applications, A.P. Malvovs, D.P. Levich and Saha, 7<sup>th</sup> Ed., 2011, Tata Mc Graw
2. Fundamentals of Digital Circuits, Anand Kumar, Jaipur, 2009, PHI Learning Pvt. Ltd.
3. Digital Circuits and systems, Vengopul, 2013, Tata Mc Graw Hill.
4. Digital Electronics G.K. Kishore, 2010, Oxford University Press
5. Digital Systems: Principles & Applications, R.J. Tocci, N.S. Widmer, 2010, PHI Learning
6. Logic circuit design, Shimon P. Vargava, 2012, Springer.
7. Digital Electronics, Nabendu Borkal, 2012, Cengage Learning.
8. Digital Electronics, S.K. Manohar, 2010, 1<sup>st</sup> edition, Mc Graw Hill
9. Microprocessor Architecture Programming & applications with 8085, 2012, R.S. Gaonkar, Prentice Hall

1. To measure (a) Voltage, and (b) Time period of a periodic waveform using CRO.
2. To test a Diode and Transistor using a Multimeter.
3. To design a switch (NOT gate) using a transistor.
4. To verify and design AND, OR, NOT and NOR gates using NAND gates.
5. To design a combinational logic system for a specified Truth Table.
6. To convert a Boolean expression into logic circuit and design it using logic gate ICs.
7. To implement a given logic circuit  
Half Adder, Full Adder and 4-bit binary Adder  
Half Subtractor, Full Subtractor, Adder-Subtractor using Full Adder IC.
8. To build Flip-Flop (RS, Clocked RS, D-type and JK) circuits using NAND gates.
9. To build JK Master slave flip flop using Flip Flop ICs.
10. To build a 4-bit Counter using D-type/JK Flip Flop ICs and study timing diagram.
11. To make a 4-bit Shift Register (serial and parallel) using D-type/JK Flip Flop ICs.
12. To design an astable multivibrator of given specifications using 555 Timer.
13. To design a monostable multivibrator of given specifications using 555 Timer.

#### REFERENCE BOOKS:

1. Modern Digital Electronics, R.P. Jain, 4th Edition, 2010, Tata McGraw Hill.
2. Basic Electronics: A text lab manual, P.B. Zbar, A.P. Malvina, M.A. Miller, 1994, Mc-Graw Hill.
3. Microprocessor Architecture Programming and applications with 8085, H.S. Gourkar, 2002, Prentice Hall.
4. Microprocessor 8085, Architecture, Programming and interfacing, A. Wadhwa, 2010, PHI Learning.

## SEMESTER-IV

### PHG 4.1: MATHEMATICAL PHYSICS-III

**Theory Credit: 4**

**Teaching Hours: 60**

#### **UNIT I**

**(12 Lectures)**

##### **Complex Analysis**

Brief Revision of Complex Numbers and their Graphical Representation, Euler's formula, De Moivre's theorem, Roots of Complex Numbers, Functions of Complex Variables, Analyticity and Cauchy-Riemann Conditions, Examples of analytic functions, Singular functions, poles and branch points, order of singularity, branch cuts.

#### **UNIT II**

**(12 Lectures)**

Integration of a function of a complex variable, Cauchy's Inequality, Cauchy's Integral formula, Simply and multiply connected regions, Laurent and Taylor's expansion, Residues and Residue Theorem, Application in solving Definite Integrals.

#### **UNIT III**

**(15 Lectures)**

##### **Integral Transforms**

Fourier Transforms: Fourier Integral theorem, Fourier Transform, Examples: Fourier transform of symmetric, Gaussian, finite wave train & other functions, Representation of Dirac delta function as a Fourier Integral, Fourier transform of derivatives, Inverse Fourier transform, Convolution theorem, Properties of Fourier transforms (translation, change of scale, complex conjugation, etc.), Three dimensional Fourier transform with examples, Application of Fourier Transform to differential equation, One dimensional Waves and Diffraction/Heat Flow Equations.

#### **UNIT IV**

**(10 Lectures)**

Laplace Transforms: Laplace Transform (LT) of Elementary functions, Properties of LTs, Change of Scale Theorem, Shifting Theorem, LTs of 1st and 2nd order Derivatives and Integrals of Functions, Derivatives and Integrals of LTs, LT of Unit Step function, Dirac Delta function, Periodic Functions.

#### **UNIT V**

**(11 Lectures)**

Convolution Theorem, Inverse LT, Application of Laplace Transforms to 2nd order Differential Equations: Damped Harmonic Oscillator, Simple Electrical Circuits, Coupled difference-differential equations of 1st order, Solution of heat flow along infinite bar using Laplace transform.

#### **REFERENCE BOOKS:**

1. Mathematical Methods for Physics and Engineers, K.F. Riley, M.P. Hobson and S. J. Bence, 3rd ed., 2006, Cambridge University Press
2. Mathematics for Physicists, P. Dourson and A. Krzywicki, 1987, Direct Publications
3. Complex Variables, A.S.Pokas & M.L.Ashwinia, 8th Ed., 2011, Cambridge Univ. Press
4. Complex Variables, A.K. Rajan, 2014, Cambridge Univ. Press
5. Complex Variables and Applications, I.W. Brown & R.V. Churchill, 7th Ed. 2013, Tata McGraw-Hill
6. First course in complex analysis with applications, D.G. Zill and P.D. Shanahan, 1940, Jones & Bartlett

Scilab/Python/C/C++ /others based simulation experiments on Mathematical Physics problems like

1. Solve differential equations

$$\frac{dy}{dx} = e^{-x} \text{ with } y = 0 \text{ for } x = 0$$

$$\frac{dy}{dx} = e^{-x} y - x^2$$

$$\frac{d^2y}{dx^2} + 2 \frac{dy}{dx} = -y$$

$$\frac{d^2y}{dx^2} + e^{-x} \frac{dy}{dx} = -y$$

2. Error Delta Function

Evaluate  $\frac{1}{\sqrt{2\pi\sigma^2}} \int e^{-\frac{(x-\mu)^2}{2\sigma^2}} (x + 3) dx$ , for  $\sigma = 1, 0.1, 0.01$  and show it tends to  $\delta$ .

3. Fourier Series

Program to sum  $\sum_{n=1}^{\infty} (0.2)^n$

Evaluate the Fourier coefficients of a given periodic function (square wave)

4. Orthogonal method and Special functions

$$\int_{-1}^{+1} P_n(x)P_m(x)dx = \delta_{nm}$$

Plot  $P_n(x), Y_n(x)$

Show recursion relation

5. Calculation of error for each data point of observations recorded in experiments done in previous semesters (where any fact)

1. Calculation of least square fitting normally without giving weights to error. Confirmation of least square fitting of data through computer program.

2. Evaluation of trigonometric functions e.g. use of Green-Beard's function at N points find its value at an intermediate point. Complex analysis: Integrate  $1/(z^2+2)$  counter-clockwise and check with contour integration

3. Compute the nth roots of unity for  $n = 2, 3,$  and  $4$ .

4. Find the two square roots of  $-5+4i$

5. Integral transforms: FFT of

6. Solve Kirchhoff's Current law for any node of an arbitrary circuit using Laplace's transform.

7. Solve Kirchhoff's Voltage law for any loop of an arbitrary circuit using Laplace's transform

8. Perform circuit analysis of a general LCR circuit using Laplace's transform.

## REFERENCE BOOKS:

1. Mathematical Methods for Physics and Engineers, R.P. Riley, M.P. Hobson and S. J. Bence, 3rd ed., 2018, Cambridge University Press
2. Mathematics for Physicists, P. Dourson and A. Krawczyk, 1983, Dover Publications
3. Simulation of COMPUTER Models with MATLAB, OCTAVE and SCILAB: Scientific and Engineering Applications, A. VazirMoazzami, P. Sauer, L. V. Ferreira, 2018 Springer ISBN 978-110867386

4. A Guide to MATLAB. B.R. Hunt, R.L. Lipsman, J.M. Rosenberg, 2014, 3rd Edn., Cambridge University Press
5. Scilab by example: M. Allouf, 2012, ISBN: 978-1479203444
6. Scilab (A free software to Matlab): H. Ramchandran, A. S. Nair, 2011 & Chandell Company
7. Scilab Image Processing: Lambert M. Sathian, 2010 Bernasconi Publishing
8. [https://web.stanford.edu/~boyd/ee362/hughes\\_ckpt.pdf](https://web.stanford.edu/~boyd/ee362/hughes_ckpt.pdf)
9. [www.mba.edu.tw/news/npload/12/244/13handout.pdf](http://www.mba.edu.tw/news/npload/12/244/13handout.pdf)

## PHC 4.2: ELEMENTS OF MODERN PHYSICS

Theory Credit: 4

Teaching Hours: 68

### UNIT I

(11 Lectures)

Planck's quantum, Planck's constant and light as a collection of photons; Blackbody Radiation; Quantum theory of Light: Photo-electric effect and Compton scattering; De Broglie wavelength and matter waves; Davisson-Germer experiment; Wave description of particles by wave packets; Group and Phase velocities and relation between them; Two slit experiment with electrons; Probability; Wave amplitude and wave functions.

### UNIT II

(13 Lectures)

Position measurement- gamma ray microscope thought experiment; Wave-particle duality; Heisenberg uncertainty principle (Uncertainty relation involving Canonical pair of variables); Derivation from Wave Packets impossibility of a particle following a trajectory; Estimating minimum energy of a confined particle using uncertainty principle; Energy-time uncertainty principle- application to Size and structure of atomic nucleus; Impossibility of an electron being in the nucleus as a consequence of the uncertainty principle.

### UNIT III

(11 Lectures)

Two slit interference experiment with photons, atoms and particles; Heise uncertainty principle as a consequence; Matter waves and wave amplitude; Schrodinger equation for non-relativistic particles; Momentum and Energy operators; stationary states; physical interpretation of a wave function; probabilities and normalization; Probability and probability current densities in one dimension.

### UNIT IV

(12 Lecture)

One dimensional infinitely rigid box- energy eigenvalues and eigen functions, normalisation; Quantum dot as example; Quantum mechanical scattering and tunnelling in one dimension across a step potential & rectangular potential barrier.

Nature of nuclear force,  $NZ$  graph, Liquid Drop model, semi-empirical mass formula and binding energy, Nuclear Shell Model and magic numbers.

### UNIT V

(13 Lecture)

Radioactivity- stability of the nucleus, Law of radioactive decay, Mean life and half-life; Alpha decay, Beta decay- energy released, spectrum and Pauli's prediction of neutrino; Gamma ray emission, energy-momentum conservation; electron-positron pair creation by gamma photons in the vicinity of a nucleus.

Fission and fusion- mass defect, relativity and generation of energy; Fission- nature of fragments and emission of neutrons, Nuclear reactor, slow neutrons interacting with Uranium 235; Fusion and thermonuclear reactions deriving stellar energy (Qualitative discussions).

Lasers: Einstein's A and B coefficients, Metastable states, Spontaneous and Stimulated emissions; Optical Pumping and Population Inversion, Three Level and Four Level Lasers; Ruby Laser and He-Ne Laser; Holography.

### REFERENCE BOOKS

1. Concepts of Modern Physics, Arthur Beiser, 2012, McGraw-Hill.
2. Introduction to Modern Physics, Rich Meyer, Reemand, Comp, 2002, Tata McGraw Hill.
3. Introduction to Quantum Mechanics, David J. Griffiths, 2005, Pearson Education.

4. *Physics for scientists and Engineers with Modern Physics*, Jewett and Serway, 2010, Cengage Learning; *Modern Physics*, G.Rae and G.R. Pickett, 2014, McGraw Hill
5. *Quantum Mechanics: Theory & Applications*, A.R.Choudhury&S.Lokanathan, 2004, Macmillan

### Books Additional for Reference

1. *Modern Physics*, I.R. Taylor, C.D. Zafiratos, M.A. Dubson, 2005, PHI Learning
2. *Theory and Problems of Modern Physics*, Schauer's outline, R. Gottman and W. Savin, 2nd Edn., Tata McGraw-Hill Publishing Co. Ltd.
3. *Quantum Physics*, Berkeley Physics, Vol.4, E.H.Wichman, 1971, Tata McGraw-Hill Co.
4. *Basic ideas and concepts in Nuclear Physics*, K. Heyde, 3rd Edn., Institute of Physics Pub.
5. *Six ideas that shaped Physics: Particle Behavior like Waves*, T.A.Morra, 2003, McGraw-Hill

**Practical Credit: 2**

**Teaching Hours: 60**

1. Measurement of Planck's constant using black body radiation and photo-diode
2. Photo-electric effect: photo current versus intensity and wavelength of light, maximum energy of photo-electrons versus frequency of light
3. To determine work function of material of filament of density treated vacuum diode
4. To determine the Planck's constant using LEDs of at least 4 different colours.
5. To determine the wavelength of H-alpha emission line of Hydrogen atom.
6. To determine the value of  $e/m$  by Magnetic focusing/ Bar magnet or by any suitable method.
7. To set up the Millikan oil drop apparatus and determine the charge of an electron.
8. To show the tunnelling effect in tunnel diode using I-V characteristics.
9. To determine the wavelength of laser source using diffraction of single slit.
10. To determine the wavelength of laser source using diffraction of double slit.

### REFERENCE BOOKS

1. *Advanced Practical Physics for students*, B.L. Fero and H.F. Westrop, 1971, Asia Publishing House
2. *Advanced level Physics Practicals*, Michael Nelson and Jon M. Oghorn, 4th Edition, reprint 1985, Heinemann Educational Publishers
3. *A Text Book of Practical Physics*, I.Praakash& Rameshchandra, 11th Edn, 2011, Kirah Mahal



## PHIC 43: ANALOG SYSTEMS AND APPLICATIONS

Theory Credit: 4

Teaching Hours: 68

### UNIT I

(10 Lectures)

**Semiconductor Diodes:** P and N type semiconductors, Energy Level Diagram, Conductivity and Mobility, Concept of Diff. velocity, PN Junctions Fabrication (Simple Idea), Barrier Formation in PN Junction Diode, Static and Dynamic Resistance, Current Flow Mechanisms in Forward and Reverse Biased Diode, Diff. Velocity, Derivation for Barrier Potential, Barrier Width and Current for Step Junction, Current Flow Mechanisms in Forward and Reverse Biased Diode.

### UNIT II

(12 Lecture)

**Two-terminal Devices and their Applications:** (1) Rectifier Diode: Half-wave Rectifiers, Center-tapped and Bridge Full-wave Rectifiers, Calculation of Ripple Factor and Rectification Efficiency, C-filter (2) Zener Diode and Voltage Regulation, Principle and structure of (1) LDR, (2) Photo diode and (3) Solar Cell

**Bipolar Junction transistors:**  $n-p-n$  and  $p-n-p$  Transistors, Characteristics of CB, CE and CC Configurations, Current gains  $\alpha$  and  $\beta$  Relations between  $\alpha$  and  $\beta$ , Load Line analysis of Transistors, DC Load line and Q point, Physical Mechanism of Current Flow- Active, Cut-off and Saturation Region.

### UNIT III

(14 Lecture)

**Amplifiers:** Transformer Coupling and Stabilization Circuits, Fixed Bias and Voltage Divider Bias, Transistor as 2-port Network, h-parameter Equivalent Circuit, Analysis of a single-stage CE amplifier using Hybrid Model, Input and Output Impedance, Current, Voltage and Power Gains, Classification of Class A, B & C Amplifiers.

**Coupled Amplifier:** Two stage RC-coupled amplifier and its frequency response

### UNIT IV

(12 Lecture)

**Feedback in Amplifier:** Effects of Positive and Negative, Feedback on Input Impedance, Output Impedance, Gain, Stability, Distortion and Noise.

**Non-sinusoidal Oscillators:** Barkhausen's Criterion for self-sustained oscillations, RC Phase shift oscillator, determination of Frequency, Hartley & Colpitts oscillators.

**Operational Amplifiers (Black Box approach):** Characteristics of an Ideal and Practical Op-Amp, (OC 741) Open-loop and Closed-loop Gain, Frequency Response, CMRR, Slow Rate and concepts of Virtual ground.

### UNIT V

(12 Lecture)

**Applications of Op-Amps:** (1) Inverting and non-inverting amplifiers, (2) Adder, (3) Subtractor, (4) Differentiator, (5) Integrator, (6) Log amplifier, (7) Zero crossing detector (8) Wein bridge oscillator.

**Conversions:** Resistive network (Wheatstone and W-DE Ladder), Accuracy and Resolution, A/D Conversion (successive approximation).

### REFERENCE BOOKS:

1. Integrated Electronics, J. Millman and C.C. Halkias, 1991, Tata Mc Graw Hill.
2. Electronics: Fundamentals and Applications, J.P. Ryder, 2004, Prentice Hall.
3. Solid State Electronic Devices, R.C. Serretson & S.K. Banerjee, 6th Edn, 2009.
4. PFD Learning Electronics: Devices & circuits, S.Nalrathnam & S.S. Kumar, 1st Ed., 2012, Tata Mc Graw Hill.
5. OP-Amps and Linear Integrated Circuit, R. A. Gayakwad, 4th Edition, 2000, Prentice Hall.
6. Microelectronic circuits, A.S. Sedra, K.C. Smith, & N. Chandrakon, 2014, 8th Edn., Oxford University Press, Electronic circuits, Handbook of design & applications, I.Tison.

### Practical Credit: 2

Teaching Hours: 60

1. To study V-I characteristics of PN junction diode, and Light emitting diode.
2. To study the V-I characteristics of a Zener diode and its use as voltage regulator.
3. Study of V-I & power curves of solar cells, and find maximum power point & efficiency.
4. To study the characteristics of a Bipolar Junction Transistor in CE configuration.
5. To design a CE transistor amplifier of a given gain (mid-band) using voltage divider bias.
6. To study the frequency response of voltage gain of a single stage RC-coupled transistor amplifier.
7. To design a phase shift oscillator of given specifications using BJT.
8. To design a Wien bridge oscillator for given frequency using an op-amp.
9. To study the analog to digital converter (ADC) IC.
10. To design an inverting amplifier using Op-amp (741,351) for dc input voltage and study its closed loop gain.
11. To design inverting amplifier using Op-amp (741,351) and study its frequency response.
12. To design non-inverting amplifier using Op-amp (741,351) & study its frequency response.
13. To investigate the use of an op-amp (741,351) as an Integrator and Differentiator.
14. To add two dc voltages using Op-amp (741,351) in inverting and non inverting mode.
15. To investigate the use of an op-amp (741,351) as adder and subtractor.

### REFERENCE BOOKS:

1. Basic Electronics: A text lab manual, P.B. Zlot, A.P. Malvina, M.A. Miller, 1994, Mc-Graw Hill.
2. OP-Amps and Linear Integrated Circuits, R. A. Gayakwad, 4th edition, 2000, Prentice Hall.
3. Electronic Principle, Albert Malvino, 2008, Tata Mc Graw Hill.
4. Electronic Devices & circuit Theory, R.L. Boylestad & L.O. Nashelsky, 2000, Pearson.

## SEMESTER-V

### PHC 51: QUANTUM MECHANICS

Theory Credit: 4

Teaching Hours: 60

#### UNIT I

(12 Lectures )

**Linear spaces:** Vector spaces and subspaces, Linear dependence and independence, Basis and dimension, Linear operators, Inverses, Inverse and rank of an operator, Matrix representation, Similarity transformations, Eigenvalues and eigenvectors, Norm and inner product, Cauchy Schwarz inequality, Orthogonality, introduction only to Gram-Schmidt Orthogonalization procedure, Self adjoint and Unitary transformations, Eigenvalues and eigenvectors of Hermitian & Unitary transformations, diagonalization

#### UNIT II

(12 Lectures )

**Operators:** Introduction to Hilbert space, Dirac's Bra and Ket notations, quantum mechanical operators and observables, different types of operators: linear operator, Hermitian operator, parity operator projection operator, identity operator, Reflection operator and Unitary operator, matrix representation of operator, change of basis, commutation relations for orbital angular momentum, eigen functions of angular momentum operators matrix representation of angular momentum operators.

#### UNIT III

(12 Lectures )

**Introduction to Quantum Mechanics:** Black body radiation, Planck hypothesis, Specific heat of solids, Photoelectric effect, Compton effect, classical atomic structure models, Bohr's theory of Hydrogen spectrum, Heisenberg's uncertainty relation, wave-particle duality, inadequacy of classical physics, the formulation of Quantum mechanics

#### UNIT IV

(12 Lectures )

**Schrödinger wave equation:** Development of wave equation- Schrödinger time-independent and dependent wave equation, Christoffel-Darboux, postulates of quantum mechanics, solution of time dependent Schrödinger equation, properties of wave function (interpretation of wave function, Probability and probability current densities in three dimensions conditions for physical acceptability of wave function, Normalization

#### UNIT V

(12 Lectures )

**One dimensional problems:** Particle in one dimension, boundary conditions at the surface of infinite potentials, infinite potential well, finite potential well, linear harmonic oscillator

#### REFERENCE BOOKS:

1. A Text book of Quantum Mechanics, P.M.Mathews and K.Venkatesan, 2nd Ed., 2010, McGraw Hill
2. Quantum Mechanics, Robert Eisberg and Robert Resnick, 2nd Edn., 2002, Wiley, Quantum Mechanics, Leonard I. Schiff, 3rd Edn. 2010, Tata Mcgraw Hill, Quantum Mechanics, G. Aruldas, 2nd Edn. 2002, PHI Learning of India, Quantum Mechanics, Bruce Cameron Reed, 2008, Jones and Bartlett Learning.
3. Quantum Mechanics: Foundations & Applications, Arno Bohm, 3rd Edn., 1993, Springer
4. Quantum Mechanics for Scientists & Engineers, D.A.B. Miller, 2008, Cambridge University Press

ADDITIONAL BOOKS FOR REFERENCE:

1. Quantum Mechanics, Targen Misrahn, 2004, John Wiley and Sons, Inc.
2. Introduction to Quantum Mechanics, D.J. Griffiths, 2nd Ed., 2005, Pearson Education
3. Quantum Mechanics, Walter Greiner, 4th Edn., 2001, Springer

Practical Credit: 2

Teaching Hours: 60

The GC will mark the following problems based on Quantum Mechanics like

1. Solve the s-wave Schrödinger equation for the ground state and the first excited state of the hydrogen atom.

$$\frac{d^2}{dr^2} = A(r)u(r), A(r) = \frac{2m}{\hbar^2} [V(r) - E] \text{ where } V(r) = -\frac{e^2}{r}$$

Here,  $m$  is the reduced mass of the electron. Obtain the energy eigenvalues and plot the corresponding wavefunctions. Remember that the ground state energy of the hydrogen atom is  $-13.6$  eV. Take  $e = 1.799$  (eVÅ)<sup>1/2</sup>,  $\hbar c = 1973$  (eVÅ) and  $m = 0.511 \times 10^6$  eV/c<sup>2</sup>.

2. Solve the s-wave radial Schrödinger equation for an atom.

$$\frac{d^2}{dr^2} = A(r)u(r), A(r) = \frac{2m}{\hbar^2} [V(r) - E]$$

where  $m$  is the reduced mass of the system (which can be chosen to be the mass of an electron), for the screened Coulomb potential

$$V(r) = -\frac{e^2}{r} e^{-\alpha r}$$

Find the energy (in eV) of the ground state of the atom to an accuracy of three significant digits. Also, plot the corresponding wavefunctions. Take  $e = 1.799$  (eVÅ)<sup>1/2</sup>,  $m = 0.511 \times 10^6$  eV/c<sup>2</sup>, and  $\alpha = 1 \text{ Å}^{-1}, 2 \text{ Å}^{-1}, 3 \text{ Å}^{-1}$ . In these units  $\hbar c = 1973$  (eVÅ). The ground state energy is expected to be above  $-13$  eV in all three cases.

3. Solve the s-wave radial Schrödinger equation for a particle of mass  $m$ .

$$\frac{d^2}{dr^2} = A(r)u(r), A(r) = \frac{2m}{\hbar^2} [V(r) - E]$$

For the infinite well potential

$$V(r) = \frac{1}{2} kr^2 \leq \frac{1}{2} ka^2$$

for the ground state energy (in MeV) of particle to an accuracy of three significant digits. Also, plot the corresponding wave function. Choose  $m = 990$  MeV/c<sup>2</sup>,  $k = 210$

MeV fm<sup>-1</sup>,  $b = 0, 10, 20$  MeV fm<sup>-1</sup> in these units,  $\hbar c = 197.3$  MeV fm. The ground state energy is expected to be between 90 and 110 MeV for all three cases.

4. Solve the s-wave radial Schrödinger equation for the vibrations of hydrogen molecule.

$$\frac{d^2}{dr^2} = A(r)u(r), A(r) = \frac{2\mu}{\hbar^2} [V(r) - E]$$

Where  $\mu$  is the reduced mass of the two atom system for the Morse potential

$$V(r) = D(e^{-2ar} - e^{-ar})^2, \quad r' = \frac{r - r_e}{r_e}$$

Find the lowest vibrational energy (in MeV) of the molecule to an accuracy of three significant digits. Also plot the corresponding wave function.

Take  $m = 940 \times 10^6$  eV/c<sup>2</sup>,  $D = 0.713951$  eV,  $a = 1.44$ ,  $r_e = 0.131345$  Å

### Laboratory based experiments:

5. Study of Electron spin resonance- Determine magnetic field as a function of the resonance frequency
6. Study of Zeeman effect: with external magnetic field; Hyperfine splitting
7. To show the scattering effect in normal disk using I-V characteristics.
8. Quantum efficiency of LEDs

### Recommended Books and References:

- Schaum's outline of Programming with C++, J. Hubbard, 2000, McGraw-Hill Publication
- Numerical Recipes in C: The Art of Scientific Computing, W.H. Press et al., 3<sup>rd</sup> Edn., 2007, Cambridge University Press.
- An introduction to computational Physics, T. Pang, 2<sup>nd</sup> Edn., 2006, Cambridge Univ. Press
- Simulation of ODE/PDE Models with MATLAB®, OCTAVE, and SCILAB: Scientific & Engineering Applications: A. Vande Wouwer, P. Saurce, C. V. Fernández, 2014 Springer.
- Scilab (A Free Software to Matlab): H. Ramchandran, A.S. Nair, 2011 S. Chand & Co.
- Scilab Image Processing: I. M. Sathyan, 2010 Beta script Publishing ISBN-978-6133459274

## PHC 5.2: SOLID STATE PHYSICS

**Theory Credit: 4**

**Teaching Hours: 60**

### UNIT I

(12 Lectures)

**Crystal Structure:** Solids: Amorphous and Crystalline Materials. Lattice Translation Vector, Lattice with a Basis. Central and Non-Central Elements, Unit Cell, Miller Indices, Reciprocal Lattice, Types of Lattices, Brillouin Zones, Diffraction of X-rays by Crystals, Bragg's Law, Atomic and Geometrical Factors.

### UNIT II

(10 Lectures)

**Elementary Lattice Dynamics:** Lattice Vibrations and Phonons, Linear Monatomic and Diatomic Chains, Acoustical and Optical Phonons, Qualitative Description of the Phonon Spectrum in Solids, Debye and Peier's Law, Einstein and Debye theories of specific heat of solids,  $T^3$  law

### UNIT III

(10 Lectures)

**Magnetic Properties of Matter:** Dia-, Para-, Ferro- and Ferromagnetic Materials, Classical Langevin Theory of dia- and Paramagnetic Domains, Quantum Mechanical Treatment of Paramagnetics, Curie's law, Weiss's Theory of Ferromagnetism and Ferromagnetic Domains, Discussion of B-H Curve, Hysteresis and Energy Loss.

### UNIT IV

(14 Lectures)

**Dielectric Properties of Materials:** Polarization, Local Electric Field at an Atom, Dipolarization Field, Electric Susceptibility, Polarizability, Clausius Mossotti Equation, Classical Theory of Electric Polarizability, Normal and Anomalous Dispersion, Cauchy and Sellmeier relations, Lorentz-Lorentz equation, Complex Dielectric Constant, Optical Phenomena, Applications, Plasma Oscillations, Plasma Frequency, Plasmons, TD modes.

**Piezoelectric Properties of Materials:** Structural phase transition, Classification of crystals, Piezoelectric effect, Pyroelectric effect, Ferroelectric effect, Electrostrictive effect, Curie-Weiss Law, Ferroelectric domains, PZT hysteretic loop.

### UNIT V

(14 Lectures)

**Elementary band theory:** Kronig-Penney model, Band Gap, Conductor, Semiconductor (P and N type) and insulator, Conductivity of Semiconduction, mobility, Hall Effect, Measurement of conductivity (H probe method) & Hall coefficient.

**Superconductivity:** Experimental Results, Critical Temperature, Critical magnetic field, Meissner effect, Type I and type II Superconductors, London's Equation and Penetration Depth, Isotope effect, Idea of BCS theory (No derivation)

### REFERENCE BOOKS:

1. Introduction to Solid State Physics, Charles Kittel, 8th Edition, 2005, Wiley India Pvt. Ltd.
2. Elements of Solid State Physics, J.P. Srivastava, 4th Edition, 2015, Prentice-Hall of India
3. Introduction to Solids, Leonard V. Ahlfors, 2004, Tata Mc Graw Hill
4. Solid State Physics, N.W. Ashcroft and N.D. Mermin, 1976, Cengage Learning
5. Solid-state Physics, H. Hach and H. Luth, 2009, Springer Solid State Physics, 10a, 10th, 2014, McGraw Hill
6. Elementary Solid State Physics, Dr. M. Ash Grove, 1999, Pearson India
7. Solid State Physics, M.A. Wahab, 2011, Rama Publications

**Practical Credit: 2**  
**Hours: 60**

**Teaching**

1. Measurement of susceptibility of paramagnetic solution by (Quinck's Tube Method/suitable method).
2. To measure the Magnetic susceptibility of Solids.
3. To measure the Dielectric Constant of a dielectric Material by suitable method.
4. To study the P-E Hysteresis loop of a Ferroelectric Crystal.
5. To draw the BH curve of Fe using Solenoid/transformer & determine energy loss from Hysteresis.
6. To measure the resistivity of a semiconductor (Ge) with temperature (by four probe method from temperature to 150 ° C) and to determine its band gap.
7. To determine the Hall coefficient of a semiconductor sample.

#### **REFERENCE BOOKS:**

1. Advanced Practical Physics for students, B.L. Hunt and H.T. Worsnop, 1977, Asia Publishing House.
2. Advanced level Physics Practicals, Michael Nelson and Jan M. Ogburn, 4th Edition, reprinted 1985, Heinemann Educational Publishers.
3. A Text Book of Practical Physics, I. Prakash& Ramakrishna, 11th Ed., 2011, Kishu Mahal
4. Elements of Solid State Physics, J.P. Srivastava, 2nd Ed., 2006, Prentice-Hall of India.

## SEMESTER-VI

### PHC 6E: ELECTROMAGNETIC THEORY

Theory Credit: 4

Teaching Hours: 60

#### UNIT I

(12 Lectures)

Maxwell Equations: Review of Maxwell's equations, Displacement Current, Vector and Scalar Potentials, Gauge Transformations, Lorentz and Coulomb Gauge, Boundary Conditions at Interface between Different Media, Wave Equations, Plane Waves in Dielectric Media, Poynting Theorem and Poynting Vector, Electromagnetic (EM) Energy Density, Physical Concept of Electromagnetic Field (Energy Density, Momentum Density and Angular Momentum Density)

#### UNIT II

(10 Lectures)

EM Wave Propagation in Unbounded Media: Plane EM waves through vacuum and isotropic dielectric medium, transverse nature of plane EM waves, refractive index and dielectric constant, wave impedance, Propagation through conducting media, relaxation time, skin depth, Wave propagation through dilute plasma, electrical conductivity of ionized gases, plasma frequency, refractive index, skin depth, application to propagation through ionosphere.

#### UNIT III

(10 Lectures)

EM Wave in Bounded Media: Boundary conditions at a plane interface between two media, Reflection & Refraction of plane waves at plane interface between two dielectric media-Laws of Reflection & Refraction, Fresnel's Formulae for perpendicular & parallel polarization cases, Brewster's law, Reflection & Transmission coefficients, Total internal reflection, evanescent waves, Metallic reflection (normal incidence).

#### UNIT IV

(17 Lectures)

Polarization of Electromagnetic Waves, Descriptors of Linear, Circular and Elliptical Polarization, Propagation of E.M. Waves in Anisotropic Media, Symmetric Nature of Dielectric Tensor, Fresnel's Formulae, Uniaxial and Biaxial Crystals, Light Propagation in Uniaxial Crystal, Double Refraction, Polarization by Double Refraction, Nicol Prism, Ordinary & extraordinary refractive indices, Production & detection of Plane, Circularly and Elliptically Polarized Light, Phase Modulation, Plane-Quarter-Wave and Half-Wave Plates, Babinet Compensator and its Uses, Analysis of Polarized Light

**Rotatory Polarization:** Optical Rotation, Biot's Law for Rotatory Polarization, Fresnel's Theory of optical rotation, Calculation of angle of rotation, Experimental verification of Fresnel's theory, Specific rotation, Laurent's half shade polarimeter

#### UNIT V

(8 Lectures)

Wave Guides: Planar optical wave guides, Planar dielectric wave guide, Condition of continuity at interface, Phase shift on total reflection, Eigenvalue equations, Phase and group velocity of guided waves, Field energy and Power transmission.

#### REFERENCE BOOKS:

1. Introduction to Electrodynamics, D.J. Griffiths, 3rd Ed., 1998, Benjamin Cummings.
2. Elements of Electromagnetics, M.N.O. Sadiku, 2001, Oxford University Press.
3. Introduction to Electromagnetic Theory, T.L. Chew, 2006, Jones & Bartlett Learning
4. Fundamentals of Electromagnetics, M.A.W. Muir, 1982, Tata McGraw Hill
5. Electromagnetic Field Theory, R.S. Khattar, 2012, Cengage Learning
6. Engineering Electromagnetics, William H. Rytz, 8th Edition, 2012, McGraw Hill.
7. Electromagnetic Field Theory for Engineers & Physicists, G. Lohmer, 2010, Springer



### Additional Books for Reference:

1. Electromagnetic Fields & Waves, P Lorrain & D Corson, 1970, W H. Freeman & Co.
2. Electromagnetics, J.A. Edmister, Schaum Series, 2006, Tata McGraw Hill.
3. Electromagnetic field theory fundamentals, B. Gura and H. Hozinglu, 2004, Cambridge

**Practical Credit: 4**

**Teaching**

**Hours: 60**

1. To verify the law of Malus for plane polarized light.
2. To determine the specific rotation of sugar solution using Polarimeter.
3. To analyse elliptically polarized Light by suitable method using a Half-wave compensator.
4. To study the polarization of light by reflection and determine the polarizing angle and hence determine the refractive index of the material.
5. To verify the Stefan's law of radiation and to determine Stefan's constant.
6. To determine the Boltzmann constant using  $V-I$  characteristics of PN junction Diode

### REFERENCE BOOKS:

1. Advanced Practical Physics for students, B.L. Frier and H.T. Worsnop, 1971, Asia Publishing House.
2. Advanced level Physics Practicals, Michael Nelson and Jon M. Ogborn, 4th Edition, reprinted 1985, Heinemann Educational Publishers
3. A Text Book of Practical Physics, I Prakash & Ramakrishna, 11th Ed., 2011, Kitab Mahal
4. Electromagnetic Field Theory for Engineers & Physicists, G. Lehnert, 2010, Springer

Theory Credit: 4

Teaching Hours: 60

## UNIT I

(16 Lectures)

Classical Statistics: Macrostate & Microstate, Elementary Concepts of Ensembles, Phase Space, Energy and Thermodynamic Probability, Maxwell-Boltzmann Distribution Law, Partition Function, Thermodynamic Parameters of an Ideal Gas, Classical Energy Expressions, Gibbs Paradox, Sackur-Tetrode equation, Law of Equipartition of Energy (with proof) – Applications to Specific Heat and its Limitations, Thermodynamic Functions of a Two Energy Levels System, Negative Temperature.

## UNIT II

(11 Lectures)

Classical Theory of Radiation: Properties of Thermal Radiation, Blackbody Radiation, Planck temperature dependence, Kirchhoff's law, Stefan-Boltzmann law, Thermodynamic proof, Radiation Pressure, Wien's Displacement law, Wien's Distribution Law, Rayleigh-Jeans Formula, Rayleigh-Jeans's Law, Ultraviolet Catastrophe.

## UNIT III

(13 Lectures)

Quantum Theory of Radiation: Spectral Distribution of Black Body Radiation, Planck's Quantum Postulate, Planck's Law of Blackbody Radiation, Experimental Verifications, Deduction of (1) Wien's Distribution Law, (2) Rayleigh-Jeans Law, (3) Stefan-Boltzmann Law, (4) Wien's Displacement law from Planck's law.

## UNIT IV

(10 Lectures)

Bose-Einstein Statistics: B-E distribution law, Thermodynamic functions of a strongly degenerate Bose Gas, Bose-Einstein condensation, properties of liquid He (qualitative description), Radiation as a photon gas and Thermodynamic functions of photon gas, Bose derivation of Planck's law.

## UNIT V

(10 Lectures)

Fermi-Dirac Statistics: Fermi-Dirac Distribution Law, Thermodynamic functions of a Completely and strongly Degenerate Fermi Gas, Fermi Energy, Electron gas in a Metal, Specific Heat of Metals, Relativistic Fermi gas, White Dwarf Stars, Chandrasekhar Mass Limit.

## REFERENCE BOOKS:

1. Statistical Mechanics, R.K. Pathria, Butterworth-Heinemann, 2nd Ed., 1996, Oxford University Press.
2. Statistical Physics, Berkeley Physics Course, F. Reif, 2009, Tata McGraw-Hill.
3. Statistical and Thermal Physics, S. Lohmann and R.S. Gaillard, 1991, Prentice Hall.
4. Thermodynamics, Kinetic Theory and Statistical Thermodynamics, Francis W. Sears and Gerald L. Salinger, 1976, Narosa.
5. Modern Thermodynamics with Statistical Mechanics, Carl S. Hellmich, 2009, Springer.
6. An Introduction to Statistical Mechanics & Thermodynamics, R.H. Swendsen, 2012, Oxford Univ. Press.

Practical Credit: 2

Teaching Hours: 60

Use MATLAB/Schulzinger software for simulations for solving the problems based on *Academic Mechanics file*.

1. Computational analysis of the behavior of a collection of particles in a box that satisfy Boltzmann mechanics and compare via the Maxwell-Boltzmann equation, varying the total number of particles  $N$  and the total conditions:
  - a) Study of total number density in the equilibrium state (i) average; (ii) fluctuations.

- (b) Study of transient behavior of the system (approach to equilibrium)
  - (c) Relationship of large  $N$  and the arrow of time
  - (d) Computation of the velocity distribution of particles for the system and comparison with the Maxwell velocity distribution
  - (e) Computation and study of mean molecular speed and its dependence on particle mass
  - (f) Computation of fraction of molecules in an ideal gas having speed near the most probable speed
2. Computation of the partition function  $Z(N)$  for examples of systems with a finite number of single particle levels (e.g., 2 level, 3 level, etc.) and a finite number of non-interacting particles  $N$  under Maxwell-Boltzmann, Fermi-Dirac and Bose-Einstein statistics.
    - (a) Study of how  $Z(N)$ , average energy  $\langle E \rangle$ , energy fluctuation  $\Delta E$ , specific heat at constant volume  $C_v$ , depend upon the temperature, total number of particles  $N$  and the spectrum of single particle states.
    - (b) Ratios of occupation numbers of various states for the systems considered above.
    - (c) Computation of physical quantities at large and small temperature  $T$  and comparison of various statistics at large and small temperature  $T$ .
  3. Plot Planck's law for Black Body radiation and compare it with Rayleigh-Jeans Law at high temperature and low temperature.
  4. Plot Specific Heat of Solids (a) Debye-Pearé law, (b) Einstein distribution function, (c) Debye distribution function for high temperature and low temperature and compare them for these two cases.
  5. Plot the following functions with energy at different temperatures
    - (a) Maxwell-Boltzmann distribution
    - (b) Fermi-Dirac distribution
    - (c) Bose-Einstein distribution

## REFERENCE BOOKS:

1. Elementary Numerical Analysis, R.P. Atkinson, 3rd Edition, 2003, Wiley India Edition
2. Statistical Mechanics, R.K. Pathria, Butterworth-Heinemann, 2nd Ed., 1996, Oxford University Press.
3. Introduction to Modern Statistical Mechanics, D. Chandler, Oxford University Press, 1987
4. Thermodynamics, Kinetic Theory and Statistical Thermodynamics, Francis W. Sears and Gerhard L. Salinger, 1986, Narosa.
5. Modern Thermodynamics with Statistical Mechanics, Carl S. Ogilvie, 2009, Springer
6. Statistical and Thermal Physics with computer applications, Harvey Gould and Jan Tobochnik, Princeton University Press, 2010
7. Simulation of CHOPIN Models with MATLAB®, OCTAVE and SCILAB: Scientific and Engineering Applications, A. VandeWortet, P. Saurat, C. V. Fernandez, 2014 Springer ISBN: 978-3-319-06789-6
8. Scilab by example: M. Aïmei, 2012, ISBN: 978-1473203444
9. Scilab Image Processing: J.M. Sathorn, 2010, Houscript Pub., ISBN: 978-613345927

## DISCIPLINE SPECIFIC ELECTIVES

### PHID 5.3: ADVANCED MATHEMATICAL PHYSICS

**Theory Credit: 6**

**Teaching Hours: 75**

#### **Calculus of Variations:**

Variable Calculus, Variational Principle, Euler's Equation and its Application to Simple Problems, Geodesics, Concept of Lagrangian, Generalized coordinates, Definition of canonical moment, Euler-Lagrange's Equations of Motion and its Applications to Simple Problems (e.g., Simple Pendulum and One-dimensional harmonic oscillator), Definition of Canonical Momenta, Canonical Pair of Variables, Definition of Generalized Force, Definition of Hamiltonian (Legendre Transformation), Hamilton's Principle, Poisson Brackets and their properties, Lagrange Brackets and their properties. (25 Lectures)

#### **Group Theory:**

Review of sets, Mapping and Binary Operations, Relations, Types of Relations.  
Groups: Elementary properties of groups, uniqueness of identity, Subgroup, Centre of a group, Cosets of a subgroup, cyclic group, Permutation/Transformation, Homomorphism and Isomorphism of group, Normal and conjugate subgroups, Completeness and Kernel.  
Some special groups with operators, Matrix Representations, Reducible and Irreducible (25 Lectures)

#### **Advanced Probability Theory:**

Fundamental Probability Theorem, Conditional Probability, Bayes' Theorem, Repeated Trials, Binomial and Multinomial expansions. Random Variables and probability distributions, Expectation and Variance, Special Probability distributions: The binomial distribution, The poisson distribution, Continuous distribution: The Gaussian (or normal) distribution, The principle of least squares. (25 Lectures)

#### **Reference Books:**

1. Mathematical Methods for Physicists: Weber and Artken, 2005, Academic Press.
2. Mathematical Methods for Physicists: A Concise Introduction: Tai L. Chow, 2000, Cambridge Univ. Press.
3. Elements of Group Theory for Physicists by A. W. Jexie, 1997, John Wiley.
4. Group Theory and its Applications to Physical Problems by Morton Hamermesh, 1989, Dover.
5. Introduction to Mathematical Physics: Methods & Concepts: Chao Wa Wong, 2012, Oxford University Press.
6. Introduction to Mathematical Probability, J. V. Uspensky, 1937, McGraw-Hill.

## PHD 3.4: NUCLEAR & PARTICLE PHYSICS

Theory Credit: 6

Teaching Hours: 75

### UNIT I

(15 Lectures)

General Properties of Nuclei: Constituents of nucleus and their intrinsic properties, quantitative facts about size, mass, charge density (matter energy), binding energy, average binding energy and its variation with mass number, main features of binding energy versus mass number curve, N/A plot, angular momentum, parity, magnetic moment, electric moments, nuclear excited states.

### UNIT II

(15 Lectures)

Nuclear Models: Liquid drop model approach, semi empirical mass formula and significance of various terms, condition of nuclear stability. Two nucleon separation energies (qualitative idea), evidence for nuclear shell structure, nuclear magic numbers, basic assumptions of shell model, concept of nuclear force.

### UNIT III

(17 Lectures)

Radioactivity decay: (a) Alpha decay: basics of  $\alpha$ -decay processes, qualitative idea of alpha emission theory, Geiger-Nuttall law,  $\alpha$ -decay spectroscopy. (b) Beta-decay: energy kinematics for beta-decay, positron emission, electron capture, neutrino hypothesis. (c) Gamma decay: Gamma rays emission & kinematics, internal conversion.

Nuclear Reactions: Types of Reactions, Conservation Laws, kinematics of reactions, Q value, reaction rate.

### UNIT IV

(9 Lectures)

Interaction of Nuclear Radiation with matter: Compton radiation, Gamma ray interaction through matter, photoelectric effect, Compton scattering, pair production.

Detector for Nuclear Radiation: Ionization chamber, proportional counter and GM Counter. Basic principle of Scintillation Detectors and construction of photo-multiplier tube (PMT). (3 Lectures) Particle Accelerators: Van-de Graaff generator, Linear accelerator, Cyclotron, Betatrons. An accelerator facility available in India.

### UNIT V

(14 Lectures)

Particle physics: Particle interactions, basic features, types of particles and its families, Symmetries and Conservation Laws: energy and momentum, angular momentum, parity, baryon number, Lepton number, Isospin, Strangeness and charm, concept of quark model.

### REFERENCE BOOKS:

1. Introductory nuclear Physics by Kenneth S. Krane (Wiley India Pvt. Ltd., 2008).
2. Concepts of nuclear physics by Bernard L. Cohen. (Tata McGraw Hill, 1995).
3. Introduction to the physics of nuclei & particles, B.A. Dasgupta. (Chandrasekhar Asia, 2009)
4. Introduction to Elementary Particles, D. Griffiths, John Wiley & Sons.
5. Quarks and Leptons, F. Halzen and A.D. Martin, Wiley India, New Delhi.
6. Basic ideas and concepts in Nuclear Physics - An Introductory Approach by K. Heyde (IOP- Institute of Physics Publishing, 2004).
7. Radiation detection and measurement, G.F. Knoll (John Wiley & Sons, 2000).
8. Theoretical Nuclear Physics, J.M. Blatt & V.J. Weisskopf ( Dover Pub. Inc., 1991).

## PHD 6.1 CLASSICAL DYNAMICS

Theory Credit: 6

Teaching Hours: 75

### UNIT I

(15 Lectures)

**Classical Mechanics:** Lagrangian formalism; Review of Newtonian Mechanics; Application to the motion of a charge particle in external electric and magnetic fields: motion in uniform electric field, magnetic field: gyroradius and gyrofrequency, motion in crossed electric and magnetic fields. Generalized coordinates and velocities, Hamilton's principle, Lagrangian and the Euler-Lagrange equations, one-dimensional examples of the Euler-Lagrange equations: one-dimensional Simple Harmonic Oscillations and falling body in uniform gravity.

### UNIT II

(15 Lectures)

**Hamiltonian Formalism:** Canonical momenta & Hamiltonian, Hamilton's equations of motion. Applications: Hamiltonian for a harmonic oscillator, solution of Hamilton's equations for Simple Harmonic Oscillations, particle in a central force field- conservation of angular momentum and energy.

### UNIT III

(15 Lectures)

**Small Amplitude Oscillations:** Minima of potential energy and points of stable equilibrium, expansion of the potential energy around a minimum, small amplitude oscillations about the minimum, normal modes of oscillations example of  $N$  identical masses connected in a linear fashion to  $(N - 1)$  identical springs.

### UNIT IV

(15 Lectures)

**Special Theory of Relativity:** Postulates of Special Theory of Relativity, Lorentz Transformations, Minkowski space, The invariant interval, light cone and world lines, Space-time diagrams, Time-dilation, length contraction and twin paradox, Four-vectors: space-like, time-like and light-like, Four-velocity and acceleration, Four-momentum and energy-momentum relation.

### UNIT V

(15 Lectures)

**Fluid Dynamics:** Density  $\rho$  and pressure  $P$  in a fluid, an element of fluid and its velocity, continuity equation and mass conservation, stream-lined motion, laminar flow, Poiseuille's equation for flow of a liquid through a pipe, Navier-Stokes equation, qualitative description of turbulence, Reynolds number.

### REFERENCE BOOKS:

1. Classical Mechanics, H.Goldstein, C.P. Poole, J.L. Safko, 3rd Edn, 2002, Pearson Education.
2. Mechanics, L. D. Landau and E. M. Lifshitz, 1976, Pergamon
3. Classical Electrodynamics, J.D. Jackson, 3rd Edn, 1998, Wiley.
4. The Classical Theory of Fields, L.D Landau, E.M Lifshitz, 4th Edn, 2005, Elsevier
5. Introduction to Electrodynamics, D.J. Griffiths, 2012, Pearson Education
6. Classical Mechanics, P.N. Jain, M.C. Rana, 1st Edn, McGraw-Hill
7. Classical Mechanics, R. Douglas Gregory, 2015, Cambridge University Press
8. Classical Mechanics: An introduction, Dieter Strauch, 2009, Springer
9. Solved Problems in Classical Mechanics, O.L. DeLange and J. Pomeroy, 2010, Oxford Press

## PHD 6.4: ASTRONOMY AND ASTROPHYSICS

Theory Credit: 6

Teaching Hours: 75

### UNIT I

(20 Lectures)

**Astronomical Scales:** Astronomical Distances, Mass and Time, Scales, Brightness, Radiation Flux and Luminosity, Measurement of Astronomical Quantities: Astronomical Distances, Stellar Radii, Masses of Stars, Stellar Temperature.

**Basic concepts of positional astronomy:** Celestial Sphere, Geometry of a Sphere, Spherical Trigonometry, Astronomical Coordinate Systems, Geographical Coordinate Systems, Horizon System, Equatorial System, Diurnal Motion of the Stars, Conversion of Coordinates, Measurement of Time, Sidereal Time, Apparent Solar Time, Mean Solar Time, Equation of Time, Calendar: Basic Parameters of Time; Determination of Distance by Parallax Method, Brightness, Radiation Flux and Luminosity, Apparent and Absolute magnitude scale, Distance Modulus, Determination of Temperature and Radius of a star.

### UNIT II

(18 Lectures)

**Astronomical techniques:** Basic Optical Definitions for Astronomy (Magnification, Light Gathering Power, Resolving Power and Diffraction Limit, Atmosphere's Window), Optical Telescopes (Types of Reflecting Telescopes, Telescope Mountings, Space Telescopes, Detection and Data Use with Telescopes (Types of Detectors, detecting Limit with Telescopes).

**Physical principles:** Gravitation in Astrophysics (Virial Theorem, Newton versus Einstein), Systems in Thermodynamic Equilibrium.

### UNIT III

(13 Lectures)

**The sun:** Solar Parameters, Solar Atmosphere, Solar Atmosphere, Chromosphere, Corona, Solar Activity, Basics of Solar Magnetohydrodynamics (Helioseismology). **The solar family:** Solar System: Facts and Figures, Origin of the Solar System: The Nebular Model, Tidal Forces and Planetary Rings, Inner Solar Objects.

**Stellar spectra and classification:** Structure (Atomic Spectra Revisited, Stellar Spectra, Spectral Types and their Temperature Dependence), Black Body Approximation, H-R Diagram.

### UNIT IV

(15 Lectures)

**The milky way – Galaxy Morphology:** Hubble's Classification of Galaxies: Basic Structure and Properties of the Milky Way, Nature of Rotation of the Milky Way (Differential Rotation of the Galaxy and Oort Constant), Rotation Curve of the Galaxy and the Dark Matter, Nature of the Spiral Arms, Star and Star Clusters of the Milky Way, Properties of and around the Galactic Nucleus.

### UNIT V

(13 Lectures)

**Large scale structure & expanding universe:** Cosmic Distance Ladder (An Example from Trigonometric Parallax, Distance Measurement using Cepheid Variables), Hubble's Law (Distance-Velocity Relation), Clusters of Galaxies (Virial Theorem and Dark Matter).

## REFERENCE BOOKS:

1. Modern Astrophysics, D.W. Carroll & D.A. Ostlie, Addison-Wesley Publishing Co.
2. Introductory Astronomy and Astrophysics, M. Zucchi and S.A. Gregory, 4th Edition, Saunders College Publishing.
3. The physical universe: An introduction to astronomy, D.Sao, MIT Valley University Science Books.
4. Fundamentals of Astronomy (Fourth Edition), H. Karttunen et al. Springer.
5. K.S. Krishnamani, 'Astro Physics a modern perspective,' Reprint, New Age International (p) Ltd, New Delhi,2002.
6. Baidyanath Bora, 'An introduction to Astro physics', second printing, Premier - H&E of India Private limited, New Delhi,2001.
7. Textbook of Astronomy and Astrophysics with elements of cosmology, V.R. Bhatia, Narosa Publication.
8. Textbook of Astronomy and Astrophysics with elements of cosmology, V.R. Bhatia, Narosa Publication.



## GENERIC ELECTIVE COURSE

### PHG 1.4: MECHANICS

Theory Credit: 4

Teaching Hours: 60

#### UNIT I: (10 Lectures)

**Vectors:** Vector algebra, Scalar and vector products. Derivatives of a vector with respect to a parameter. **Ordinary Differential Equations:** 1st order homogeneous differential equations, 2nd order homogeneous differential equations with constant coefficients.

#### UNIT II: (17 Lectures)

**Laws of Motion:** Frames of reference, Newton's Laws of motion, Dynamics of a system of particles, Centre of Mass, Momentum and Energy, Conservation of momentum, Work and energy, Conservation of energy, Motion of rockets, Rotational Motion, Angular velocity and angular momentum, Torque, Conservation of angular momentum.

#### UNIT III: (10 Lectures)

**Gravitation:** Newton's Law of Gravitation, Motion of a particle in a central force field (motion is in a plane, angular momentum is conserved, areal velocity is constant), Kepler's Laws (statement only), Satellite in circular orbit and applications, Escape/Orbital orbits, Weightlessness, Basic idea of global positioning system (GPS).

#### UNIT IV: (8 Lectures)

##### Oscillation

Simple harmonic motion, differential equation of SHM and its solutions, Kinetic and potential energy, total energy and their time averages, Damped oscillations.

#### UNIT V: (15 Lectures)

##### Elasticity

Hooke's law - Stress-strain diagram - Elastic moduli/Relation between elastic constants - Poisson's Ratio Expression for Poisson's ratio in terms of elastic constants - Work done in stretching and work done in twisting a wire - Twisting couple on a cylinder, Torsional pendulum.

**Special Theory of Relativity:** Constancy of speed of light, Postulates of Special Theory of Relativity, Length contraction, Time dilation, Relativistic addition of velocities.

### REFERENCE BOOKS:

University Physics, PW Sears, MW Zemansky and HD Young/Le, 1986, Addison-Wesley  
Mechanics Berkeley Physics course, v 1 Charles Kittel, et. Al. 2007, Tata McGraw-Hill  
Physics - Resnick, Halliday & Walker 9e, 2010, Wiley  
Engineering Mechanics, Banshidh Bhattacharya, 3rd edn., 2015, Oxford University Press  
University Physics, Ronald Lane Reese, 2003, Thomson Brooks/Cole

Measurements of length (or diameter) using Vernier Calliper, screw gauge and travelling microscope.

1. To determine the Moment of Inertia of a regular body by torsional pendulum.
2. To determine the Young's Modulus of a Wire.
3. To determine the Modulus of Rigidity of a Wire.
4. To determine  $g$  by Bar Pendulum.
5. To determine  $g$  by Kater's Pendulum.
6. To determine  $g$  and velocity for a freely falling body using Digital Timing Technique
7. To study the Motion of a Spring and calculate (a) Spring Constant (b) Value of  $g$
8. To determine the Coefficient of Viscosity of water by Capillary Flow Method (Poiseuille's method)

### **REFERENCE BOOKS:**

1. *Advanced Practical Physics for students*, B.L.Flatt and H.T.Worsnop, 1971, Asia Publishing House.
2. *Advanced level Physics Practicals*, Michael Nelson and Jon M. Ogborn, 4th Edition, reprint 1983, Heinemann Educational Publishers.
3. *Engineering Practical Physics*, S.Panigrahi & B.Mallick, 2015, Cengage Learning India Pvt. Ltd.
4. *A Text Book of Practical Physics*, Indi Prakash and Ramakrishna, 11th Edition, 2011, Kitab Mahal, New Delhi.

## PHG 2.4: ELECTRICITY AND MAGNETISM

Theory Credit: 4

Teaching Hours: 60

### UNIT I

(12 Lectures)

**Vector Analysis:** Review of vector algebra (Scalar and Vector product), gradient, divergence, Curl and their significance, Vector Integrals, Line, surface and volume integrals of Vector fields, Gauss/convergence theorem and Stoke's theorem of vectors (abstractly only).

### UNIT II

(15 Lectures)

**Electrostatics:** Electrostatic field, electric flux, Gauss's theorem of electrostatics. Applications of Gauss theorem- Electric field due to point charge, infinite line of charge, uniformly charged spherical shell and solid sphere, plane charged sheet, charged conductors. Electric potential as line integral of electric field, potential due to a point charge, electric dipole, uniformly charged spherical shell and solid sphere. Calculation of electric field from potential. Capacitance of an isolated spherical conductor. Parallel plate, spherical and cylindrical condenser. Energy per unit volume in electrostatic field. Dielectric medium, Polarisation, Displacement vector, Gauss's theorem in dielectrics. Parallel plate capacitor completely filled with dielectric.

### UNIT III

(13 Lectures)

**Magnetism:** Magnetostatics. Bio-Savart's law & its applications- straight conductor, circular coil, solenoid carrying current. Divergence and curl of magnetic field. Magnetic vector potential. Ampere's circuital law. Magnetic properties of materials: Magnetic intensity, magnetic induction, permeability, magnetic susceptibility. Brief introduction of dia-, para- and ferro magnetic materials.

### UNIT IV

(10 Lectures)

**Electromagnetic Induction:** Faraday's laws of electromagnetic induction, Lenz's law, self and mutual inductance,  $L$  of single coil,  $M$  of two coils. Energy stored in magnetic field. Transformer, Auto Transformer, different types of transformer.

### UNIT V

(10 Lectures)

**Maxwell's equations and Electromagnetic wave propagation:** Equation of continuity of current, Displacement current, Maxwell's equations, Poynting vector, energy density in electromagnetic field, electromagnetic wave propagation through vacuum.

### REFERENCE BOOKS:

1. Electricity and Magnetism, Edward M. Purcell, 1960, McGraw-Hill Education.
2. Electricity and Magnetism, J.D. Pedroni & J. Vanvorsool, Vol. 1, 1981, Oxford Univ. Press. Electricity and Magnetism, D.C. Fayol, 1988, Himalaya Publishing House.
3. University Physics, Harold Law Hamee, 2003, Thomson Brooks/Cole. D.J. Griffiths.
4. Introduction to Electrodynamics, 3rd Edn, 1998, Benjamin Cummings.

1. To use a Multimeter for measuring (a) Resistances, (b) AC and DC Voltages, (c) DC Current, and (d) checking electrical lines.
2. To determine the specific resistance by metre bridge.
3. To determine the strength of the magnetic field produced at the centre of the tangent galvanometer coil due to a current flowing in it and hence to determine – Horizontal component of earth's magnetic field.
1. To determine the self inductance of a coil and its internal resistance in an L-R circuit
2. To study for a series LCR circuit and determine (a) Resonant Frequency, (b) Quality Factor
3. To determine the resistance of a galvanometer by half deflection method.
4. To determine a resistance per unit length of metre bridge wire by Carey Foster's method.
5. To verify the Thevenin and Norton theorems.
6. To verify series and parallel laws of resistance by Post office Box.
7. To compare the e.m.f of two cells by potentiometer.

**REFERENCE BOOKS:**

1. Advanced Practical Physics for students, B.L.Ford&H.F.Worwood, 1971, Asia Publishing House.
2. A Text Book of Practical Physics, Indu Prakash and Ramakrishna, 11th Edition, 2011, Kitab Mahal New Delhi. Engineering Practical Physics, S.Panigrahi& B.Mallick,2013, Cengage Learning India Pvt. Ltd
3. Advanced level Physics Practicals, Michael Nelson and Jon M. Oplorn, 4th Edition, reprinted 1985, Derramans Educational Publishers.

## PHG 3.5: THERMAL PHYSICS AND STATISTICAL MECHANICS

Theory Credit: 4

Teaching Hours: 60

### UNIT I:

(15 Lectures)

#### Laws of Thermodynamics

Thermodynamic Description of system: Zeroth Law of thermodynamics and temperature, First law and internal energy, conversion of heat into work, Various Thermodynamical Processes, Applications of First Law, General Relation between  $C_P$  &  $C_V$ , Work Done during isothermal and Adiabatic Processes, Compressibility & Expansion Coefficient, Reversible & irreversible processes, Second law & Entropy, Carnot's cycle & theorem, Energy changes in reversible & irreversible processes, Entropy-temperature diagrams, Third law of thermodynamics, Unattainability of absolute zero.

### UNIT II:

(12 Lectures)

#### Thermodynamic Potentials

Enthalpy, Gibbs, Helmholtz and Internal Energy functions, Maxwell's relations & applications - Joule-Thomson Effect, Clausius-Clapeyron Equation, Derivation for  $(C_P - C_V)$ ,  $C_P/C_V$ ,  $\gamma$  equations.

### UNIT III:

(12 Lectures)

#### Kinetic Theory of Gases

Derivation of Maxwell's law of distribution of velocities and its experimental verification, Mean free path (Zeroth Order), Transport Phenomena: Viscosity, Conduction and Diffusion (for vertical case), Law of equipartition of energy (no derivation) and its applications to specific heat of gases, monoatomic and diatomic gases.

### UNIT IV:

(10 Lectures)

#### Theory of Radiation

Blackbody radiation: Spectral distribution, Concept of Energy Density, Derivation of Planck's law, Deduction of Wien's displacement law, Rayleigh-Jeans Law, Stefan Boltzmann Law and Wien's displacement law from Planck's law.

### UNIT V:

(11 Lectures)

#### Statistical Mechanics

Phase space, Macrostate and Microstate, Entropy and Thermodynamics, probability, Maxwell Boltzmann law distribution of velocity - Quantum statistics - Fermi-Dirac distribution law, Bose-Einstein distribution law, comparison of three statistics.

#### REFERENCE BOOKS:

1. Thermal Physics, S. Goup, R. Barad and C. Ghosh, 1999, Tata McGraw-Hill
2. A Treatise on Heat, MeghnaDatta, and B.N. Srivastava, 1989, Indian Press
3. Thermodynamics, Enrico Fermi, 1956, Courier Dover Publications
4. Heat and Thermodynamics, M.W. Zemansky and R. Dittman, 1951, McGraw Hill

5. Thermodynamics, Kinetic theory & Statistical Thermodynamics, F.W. Sears &
6. G.L. Squires 1988, Narosa
7. University Physics, Revised Lane Series, 2003, Thomson Brooks/Cole
8. Thermal Physics, A. Kumar and A.P. Farnia, 2014, R. Chand Publications.

**Practical Credit: 2**

**Teaching Hours: 60**

1. To determine Mechanical Equivalent of Heat,  $J$ , by Joule's method
2. To determine the specific heat of a liquid by the method of cooling
3. To verify Stefan's law by electrical method
4. To determine the coefficient of thermal conductivity of copper by Seebeck's Apparatus
5. To determine the coefficient of linear expansion by spherule method
6. To determine the temperature co-efficient of resistance by Platinum resistance thermometer
7. To study the variation of resistance across two junctions of a thermocouple with temperature

#### REFERENCE BOOKS:

1. Advanced Practical Physics for students, B.L. Flint & I.F. Worthing, 1971, Asia Publishing House.
2. Advanced level Physics Practicals, Michael Nelson and Ann M. Dignam, 4th Edition, reprinted 1983, Heinemann Educational Publishers
3. A Text Book of Practical Physics, Indi Prakash and Ramakrishna, 11th Edition, 2011, Kitab Mahal, New Delhi.
4. A Laboratory Manual of Physics for Undergraduate Classes, D.P. Khambhwal, 1983, Vani Pub. house

## PHG 45: ELEMENTS OF MODERN PHYSICS

Theory Credit: 4

Teaching Hours: 60

### UNIT I

(12 Lecture)

Planck's quantum, Planck's constant and light as a collection of photons, Photo-electric effect and Compton scattering, De Broglie wavelength and matter waves, Davisson-Germer experiment, Problems with Rutherford model- instability of atoms and observation of discrete atomic spectra; Bohr's quantization rule and atomic stability; calculation of energy levels for hydrogen like atoms and their spectra.

### UNIT II

(9 Lecture)

Position measurement- gamma ray microscope thought experiment, Wave-particle duality, Heisenberg uncertainty principle- impossibility of a particle following a trajectory; Estimating minimum energy of a confined particle using uncertainty principle; Energy-time uncertainty principle.

### UNIT III

(10 Lecture)

Two slit interference experiment with photons, atoms & particles, wave superposition principle as a consequence, Matter waves and wave amplitude, Schrodinger equation for non-relativistic particles, Measurement and Energy eigenstates, stationary states, physical interpretation of wavefunction, probabilities and normalizations. Probability and probability current densities in one dimension.

### UNIT IV

(13 Lecture)

One dimensional infinitely rigid box- energy eigenvalues and eigenfunctions, normalizations, Quantum dot as an example; Quantum mechanical scattering and tunnelling in one dimension- across a step potential and across a rectangular potential barrier.

Size and structure of atomic nucleus and its relation with atomic weight, impossibility of an electron being in nucleus as a consequence of the uncertainty principle, Nature of nuclear force,  $NZ$  graph, semi-empirical mass formula and binding energy.

### UNIT V

(16 Lecture)

Radioactivity: stability of nucleus, Law of radioactive decay, Mean life and half-life, decay, decay - energy released, spectrum,  $\alpha$  and  $\beta$  decay, production of neutrons,  $\gamma$  emission.

Fission and fusion - mass defect, relativity and generation of energy; Fusion - source of hydrogen and creation of neutrons, Nuclear reactor: slow neutrons interacting with Uranium 235, Fusion and deuterium-tritium neutrons.

### REFERENCE BOOKS

1. Concepts of Modern Physics, Arthur Beiser, 2009, McGraw Hill.
2. Modern Physics, J.B. Taylor, C.D. Zafiratos, M.A. Dubson, 2009, PHI Learning.
3. Six Ideas that Shaped Physics Particle Behave like Waves, Thomas A. Moore, 2003, McGraw Hill.
4. Quantum Physics, Berkeley Physics, Vol.4, L.H. Wideman, 2008, Tata McGraw-Hill Co.
5. Modern Physics, R.A. Serway, C.J. Moses, and C.A. Moses, 2005, Cengage Learning.
6. Modern Physics, G. Kant and G.R. Pakrath, 2014, McGraw Hill.

1. To determine value of Hallmanns constant using V-I characteristic of PN diode.
2. To determine work function of material of filament of directly heated vacuum diode.
3. To determine the ionization potential of mercury.
4. To determine value of Planck's constant using LEDs of at least 4 different colours.
5. To determine the wavelength of H- $\alpha$  emission line of Hydrogen atom.
6. To determine the absorption lines in the rotational spectrum of iodine vapour.
7. To study the diffraction pattern of single and double slit using laser and measure its intensity variation using Photometer & compare with interference source - Na.
8. Photo electric effect: photo current vs. intensity and wave length of light; maximum energy of photo electrons vs. frequency of light
9. To determine the value of  $\mu_0$  by (a) Magnetic focusing or (b) Bar magnet.
10. To setup the Millikan oil drop apparatus and determine the charge of an electron.

#### REFERENCE BOOKS:

1. L. Advanced Practical Physics for students, H.E. Hall and H.E. Wiersma, 1971, Asia Publishing House.
2. J. Advanced level Physics Practicals, Michael Nelson and Jon M. Osborn, 4th Edition, reprinted 1982, Heinemann Educational Publishers 91.
3. A Text Book of Practical Physics, Bala Prasad and Ramakrishna, 11th Edition, 2011, Kriya Mond, New Delhi.



# SKILL ENHANCEMENT COURSE

## PHS 3.4: ELECTRICAL CIRCUITS AND NETWORK

Theory Credit: 2

Teaching Hours: 30

### UNIT I

(2 Lectures)

**Basic Electricity Principles:** Voltage, Current, Resistance, and Power, Ohm's law. Series, parallel, and series-parallel combinations. AC Electricity and DC Electricity. Familiarization with multimeter, voltmeter and ammeter.

### UNIT II

(4 Lectures)

**Understanding Electrical Circuits:** Main electric circuit elements and their combination. Rules to analyze DC circuit electrical circuits. Current and voltage drop across the DC circuit elements. Single-phase and three-phase alternating current sources. Rules to analyze AC sourced electrical circuits. Real, imaginary and complex power components of AC source. Power factor. Saving energy and money.

### UNIT III

(7 Lectures)

**Electrical Drawing and Symbols:** Drawing symbols, Blueprints, Reading Schematics, Ladder diagrams, Electrical Schematics, Power circuits, Control circuits. Reading of circuit schematics. Tracing the connections of elements and identify current flow and voltage drop.

**Generators and Transformers:** DC Power sources. AC/DC generators. Inductance, capacitance, and impedance. Operation of transformers.

### UNIT IV

(11 Lectures)

**Electric Motors:** Single-phase, three-phase & DC motors. Basic design. Interfacing DC or AC sources to control beams & motors. Speed & power of ac motor.

**Solid State Devices:** resistors, inductors and capacitors. Diode and rectifiers. Components in Series or in shunt. Response of inductors and capacitors with DC or AC sources.

**Electrical protection:** Relays. Fuses and disconnector switches. Circuit breakers. Overload devices. Ground-fault protection. Grounding and isolating. Phase reversal. Surge protection. Interfacing DC or AC sources to control elements (relay protection devices)

### UNIT V

(5 Lectures)

**Electrical Wiring:** Different types of conductors and cables. Basics of Wiring bus and delta connections. Voltage drop and losses across cables and conductors. Instruments to measure current, voltage, power in DC and AC circuits. Insulators. Solid and stranded cable. Conduit. Cable trays. Spline wireman, crimps, terminal blocks, slot bolts, and solder. Preparation of extension board.

#### REFERENCE BOOKS:

1. A text book in Electrical Technology - B.L. Theraja - S.Chand & Co.
2. A text book of Electrical Technology - A.K. Theraja
3. Performance and design of AC machines - M.G.Say PEES text

## PHS 4.1: RENEWABLE ENERGY

Theory Credit: 2

Teaching Hours: 30

### UNIT I:

(6 Lectures)

**Fossil Fuels and Alternate Sources of energy:** Fossil fuels and nuclear energy, their limitation, need of renewable energy, non-conventional energy sources. An overview of developments in Offshore Wind Energy, Tidal Energy, Wave energy systems, Ocean Thermal Energy Conversion, solar energy, biomass, bio-fuel, bio-ethanol conversion, biogas generation, geothermal energy, tidal energy, Hydroelectricity.

### UNIT II:

(6 Lectures)

**Solar energy:** Solar energy, its importance, storage of solar energy, solar pond, non-convective solar pond, applications of solar pond and solar energy, solar water heater, Flat plate collector, solar stills, solar cooker, solar green houses, solar cell, absorption air conditioning. Need and characteristics of photovoltaic (PV) systems, PV modules and equivalent circuits, and sun tracking systems.

### UNIT III:

(7 Lectures)

**Wind Energy harvesting:** Fundamentals of Wind energy, Wind Turbines and different electrical machines in wind turbines, Power electronic interfaces, and grid interconnection topologies.

**Ocean Energy:** Ocean Energy Potential against Wind and Solar, Wave Characteristics and Statistics, Wave Energy Devices, Tide characteristics and Statistics, Tide Energy Technologies, Ocean Thermal Energy, Oceanic Power, Ocean Bio-mass.

### UNIT IV:

(7 Lectures)

**Geothermal Energy:** Geothermal Resources, Geothermal Technologies.

**Hydro Energy:** Hydropower resources, hydropower technologies, environmental impact of hydro power sources.

**Piezoelectric Energy harvesting:** Introduction, Physics and characteristics of piezoelectric effect, materials and mathematical description of piezoelectricity. Piezoelectric generation and modeling piezoelectric generators, Piezoelectric energy harvesting applications, Human power.

### UNIT V:

(4 Lecture)

### Electromagnetic Energy Harvesting

Linear generators, physics mathematical models, recent applications. Carbon captured technologies, cell, batteries, power consumption. Environmental issues and Renewable sources of energy, sustainability.

**Demonstrations and Experiments:** Demonstration of Training modules on Solar energy, wind energy, etc. Conversion of vibration to voltage using piezoelectric materials. Conversion of thermal energy into voltage using thermoelectric modules.

### REFERENCE BOOKS:

1. Non-conventional energy sources - G. D. Rai - Krishna Publishers, New Delhi.
2. Solar energy - M. P. Agarwal - S. Chand and Co. Ltd.
3. Solar energy - Subin P. Sukhatia- Tata McGraw - Hill Publishing Company Ltd.
4. Geoffrey Boyle, — Renewable Energy, Power for a sustainable future, 2004, Oxford University Press, in association with The Open University.
5. Dr. P. Jayaraman, Solar Energy- Renewable Resources Handbook, 2009.
6. J. Ballou, M. Shaw and S. Lamm, Photovoltaics, Lawrence E. Goodrich (U.S.A.)

**St. Joseph's College (Autonomous)**  
**SCHEME AND SYLLABUS FOR CHOICE BASED**  
**CREDIT SYSTEM FOR B.Sc. HONOURS ZOOLOGY**

Semester	Core Course (C)	Ability Enhancement Course (A)	Skilled Enhancement Course (S)	Discipline Specific Elective (D)	Generic Elective (G)
<b>I</b>	ZOC 1.1 Non-chordates I: Protista to Pseudocoelomates	EGA 1.3 English Communication			ZOG 1.4 Environment and Public Health
	ZOC 1.2 Principles of Ecology				
<b>II</b>	ZOC 2.1 Non-chordates II: Coelomates	ESA 2.3 Environmental Studies			ZOG 2.4 Animal Diversity
	ZOC 2.2 Cell Biology				
<b>III</b>	ZOC 3.1 Diversity of Chordates		ZOS 3.4 Apiculture		ZOG 3.5 Aquatic Biology
	ZOC 3.2 Animal Physiology: Controlling and Coordinating Systems				
	ZOC 3.3 Fundamentals of Biochemistry				
<b>IV</b>	ZOC 4.1 Comparative Anatomy of Vertebrates		ZOS 4.4 Aquarium Fish Keeping		ZOG 4.5 Human Physiology
	ZOC 4.2 Animal Physiology: Life Sustaining Systems				
	ZOC 4.3 Biochemistry of Metabolic Processes				
<b>V</b>	ZOC 5.1 Molecular Biology			ZOD 5.3 Immunology	
	ZOC 5.2 Principles of Genetics			ZOD 5.4 Fish and Fisheries	
<b>VI</b>	ZOC 6.1 Developmental Biology			ZOD 6.3 Reproductive Biology	
	ZOC 6.2 Evolutionary Biology			ZOD 6.4 Biology of Insecta	
<b>No. of Courses</b>	14 (84)	2 (4)	2 (4)	4 (24)	4(24)

Semester	Course Opted	Course Name	Credits
I	Ability Enhancement Compulsory Course-I	English communications/ Environmental Science	2
	Core course-I	Non-chordates I: Protista to Pseudocoelomates	4
	Core Course-I Practical		2
	Core course-II	Principles of Ecology	4
	Core Course-II Practical		2
	Generic Elective -1	GE-1	4
	Generic Elective -1 Practical/Tutorial		2
II	Ability Enhancement Compulsory Course-II	Englishcommunications/ EnvironmentalScience	2
	Core course-III	Non-chordates II: Coelomates	4
	Core Course-III Practical		2
	Core course-IV	Cell Biology	4
	Core Course-IV Practical		2
	Generic Elective -2	GE-2	4
	Generic Elective -2 Practical		2
III	Core course-V	Diversity of chordates	4
	Core Course-V Practical		2
	Core course-VI	Physiology: Controlling and Coordinating systems	4
	Core Course-VI Practical		2
	Core course-VII	Fundamentals of Biochemistry	4
	Core Course-VII Practical		2
	Skill Enhancement Course-1	SEC-1	2
	Generic Elective -3	GE-3	4
	Generic Elective -3 Practical		2
IV	Core course-VIII	Comparative anatomy of vertebrates	4
	Course-VIII Practical		2
	Core course-IX	Physiology: Life Sustaining Systems	4
	Course-IX Practical		2
	Core course-X	Biochemistry of Metabolic Processes	4
	Core Course- X Practical		2
	Skill Enhancement Course-2	SEC-2	2
	Generic Elective -4	GE-4	4
	Generic Elective -		2
	4Practical		
V	Core course-XI	Molecular Biology	4
	Core Course-XI Practical		2

Semester	Course Opted	Course Name	Credits
	Core Course - XII	Principles of Genetics	4
	Core Course - XII Practical	Principles of Genetics	2
	Discipline Specific Elective -1	DSE-1	4
	Discipline Specific Elective -1 Practical		2
	Discipline Specific Elective -2	DSE-2	4
	Discipline Specific Elective- 2 Practical/Tutorial		2
VI	Core course-XIII	Developmental Biology	4
	Core Course-XIII Practical/Tutorial		2
	Core course-XIV	Evolutionary Biology	4
	Core Course-XIV Practical/Tutorial		2
	Discipline Centric Elective -3	DSE-3	4
	Discipline Centric Elective -3 Practical/Tutorial		2
	Discipline Centric Elective-4	DSE-4	4
	Discipline Centric Elective -1 Practical/Tutorial		2
<b>Total: 140</b>			

### CORE COURSES

CC I	Non-chordates I: Protista to Pseudocoelomates
CC II	Principles of Ecology
CC III	Non-chordates II: Coelomates
CC IV	Cell Biology
CC V	Diversity of Chordates
CC VI	Animal Physiology: Controlling and Coordinating Systems
CC VII	Fundamentals of Biochemistry
CC VIII	Comparative Anatomy of Vertebrates
CC IX	Animal Physiology: Life Sustaining Systems
CC X	Biochemistry of Metabolic Processes
CC XI	Molecular Biology
CC XII	Principles of Genetics
CC XIII	Developmental Biology
CC XIV	Evolutionary Biology

<b>DISCIPLINE SPECIFIC ELECTIVE COURSES</b>	
<b>DSE 1</b>	Immunology
<b>DSE 2</b>	Fish and Fisheries
<b>DSE 3</b>	Reproductive Biology
<b>DSE 4</b>	Biology of Insecta
<b>GENERIC ELECTIVE COURSES</b>	
<b>GE 1</b>	Environment and Public Health
<b>GE 2</b>	Animal Diversity
<b>GE 3</b>	Aquatic Biology
<b>GE 4</b>	Human Physiology
<b>SKILL ENHANCEMENT COURSES</b>	
<b>SEC 1</b>	Apiculture
<b>SEC 2</b>	Aquarium Fish Keeping

## CORE COURSE

### ZOC 1.1: NON-CHORDATES I: PROTISTS TO PSEUDOCOELOMATES

#### THEORY

(Credits 4)

#### Unit 1: Protista, Parazoa and Metazoa

19

General characteristics and Classification up to classes  
Study of *Euglena*, *Amoeba* and *Paramecium*  
Life cycle and pathogenicity of *Plasmodium vivax*  
Nutrition, Locomotion and Reproduction in Protista  
Evolution of symmetry and segmentation of Metazoa

#### Unit 2: Porifera

7

General characteristics and Classification up to classes;  
Reproduction and development in sponges: (sycon).  
Canal system and spicules in sponges

#### Unit 3: Cnidaria

12

General characteristics and Classification up to classes;  
Metagenesis in *Obelia*  
Polymorphism in Cnidaria  
Corals and coral reefs

#### Unit 4: Ctenophora and Platyhelminthes

14

General characteristics and Evolutionary significance of Ctenophora;  
General characteristics and classification up to orders; Life cycle and pathogenicity of *Fasciola hepatica* and *Taenia solium*

#### Unit 5: Nematelminthes

8

General characteristics and Classification up to classes;  
Life cycle, and pathogenicity of *Ascaris lumbricoides* and *Wuchereria bancrofti*  
Parasitic adaptations in helminthes

**Note:** Classification to be followed from “Barnes, R.D. (1982). *Invertebrate Zoology*, V Edition”

## PRACTICALS

(Credits 2)

1. Study of whole mount of *Euglena*, *Amoeba* and *Paramecium*, Binary fission and Conjugation in *Paramecium*
2. Examination of pond water collected from different places for diversity in protista
3. Study of *Sycon* (T.S. and L.S.), *Hyalonema*, *Euplectella*, *Spongilla*
4. Study of *Obelia*, *Physalia*, *Millepora*, *Aurelia*, *Tubipora*, *Corallium*, *Alcyonium*, *Gorgonia*, *Metridium*, *Pennatula*, *Fungia*, *Meandrina*, *Madrepora*
5. One specimen/slide of any ctenophore
6. Study of adult *Fasciola hepatica*, *Taenia solium* and their life cycles (Slides/micro-photographs)
7. Study of adult *Ascaris lumbricoides* and its life stages (Slides/micro-photographs)
8. To submit a Project Report on any related topic on life cycles/coral/ coral reefs.

**Note:** Classification to be followed from “Ruppert and Barnes (2006) *Invertebrate Zoology*, 8<sup>th</sup> edition, Holt Saunders International Edition”

## SUGGESTED READINGS

- Ruppert and Barnes, R.D. (2006). *Invertebrate Zoology*, VIII Edition. Holt Saunders International Edition.
- Barnes, R.S.K., Calow, P., Olive, P.J.W., Golding, D.W. and Spicer, J.I. (2002). *The Invertebrates: A New Synthesis*, III Edition, Blackwell Science
- Barrington, E.J.W. (1979). *Invertebrate Structure and Functions*. II Edition, E.L.B.S. and Nelson



## ZOC 1.2: PRINCIPLES OF ECOLOGY

### THEORY

(Credits 4)

#### Unit 1: Introduction to Ecology

6

History of ecology, Concept of Species; Autecology and synecology, Levels of organization, Laws of limiting factors, Study of physical factors

#### Unit 2: Population

24

Unitary and Modular populations

Unique and group attributes of population: Density, natality, mortality, life tables, fecundity tables, survivorship curves, age ratio, sex ratio, dispersal and dispersion Exponential and logistic growth, equation and patterns, r and K strategies Population regulation - density-dependent and independent factors

Population interactions, Gause's Principle with laboratory and field examples.

#### Unit 3: Community

12

Community characteristics: species richness, dominance, diversity, abundance, vertical stratification, Ecotone and edge effect; Ecological succession with one example; Theories pertaining to climax community

#### Unit 4: Ecosystem

14

Types of ecosystems with one example in detail, Food chain: Detritus and grazing food chains, Linear and Y-shaped food chains, Food web, Energy flow through the ecosystem, Ecological pyramids and Ecological efficiencies Nutrient and biogeochemical cycle with one example of Nitrogen cycle Human modified ecosystem

#### Unit 5: Applied Ecology

4

Ecology in Wildlife Conservation and Management

### PRACTICALS

(Credits 2)

1. Study of life tables and plotting of survivorship curves of different types from the hypothetical/real data provided
2. Determination of population density in a natural/hypothetical community by quadrat method and calculation of Shannon-Weiner diversity index for the same community
3. Study of an aquatic ecosystem: Phytoplankton and zooplankton, Measurement of area, temperature, turbidity/penetration of light, determination of pH, and Dissolved Oxygen content (Winkler's method), Chemical Oxygen Demand and free CO<sub>2</sub>
4. Report on a visit to National Park/Biodiversity Park/Wild life sanctuary

### SUGGESTED READINGS

- ◆ Colinvaux, P. A. (1993). Ecology. II Edition. Wiley, John and Sons, Inc.
- ◆ Krebs, C. J. (2001). Ecology. VI Edition. Benjamin Cummings.
- ◆ Odum, E.P., (2008). Fundamentals of Ecology. Indian Edition. Brooks/Cole
- ◆ Robert Leo Smith Ecology and field biology Harper and Row publisher
- ◆ Ricklefs, R.E., (2000). Ecology. V Edition. Chiron Pres

## ZOC 2.1: NON-CHORDATES II: COELOMATES

### THEORY

(Credits 4)

#### Unit 1: Introduction to Coelomates

2

Evolution of coelom and metamerism

#### Unit 2: Annelida and Onychophora

14

General characteristics and Classification up to classes;  
Excretion and locomotion in Annelida;  
Evolutionary significance of Onychophora

#### Unit 3: Arthropoda

17

General characteristics and Classification up to classes; Vision and Respiration in Arthropoda;  
Metamorphosis in Insects; Social life in bees and termites.

#### Unit 4: Mollusca

15

General characteristics and Classification up to classes, Respiration in Mollusca, Torsion and detorsion  
in Gastropoda, Pearl formation in bivalves, Evolutionary significance of trochophore larva

#### Unit 5: Echinodermata

12

General characteristics and Classification up to classes;  
Water-vascular system in Asteroidea;  
Larval forms in Echinodermata;

Affinities with Chordates.

**Note:** Classification to be followed from “Ruppert and Barnes (2006) *Invertebrate Zoology*, 8<sup>th</sup> edition, Holt Saunders International Edition”

### PRACTICAL

(Credits 2)

1. Study of following specimens: Annelids - *Aphrodite*, *Nereis*, *Heteronereis*, *Sabella*, *Serpula*, *Chaetopterus*, *Pheretima*, *Hirudinaria* Arthropods - *Limulus*, *Palamnaeus*, *Palaemon*, *Daphnia*, *Balanus*, *Sacculina*, *Cancer*, *Eupagurus*, *Scolopendra*, *Julus*, *Bombyx*, *Periplaneta*, termites and honey bees Onychophora - *Peripatus*  
Molluscs - *Chiton*, *Dentalium*, *Pila*, *Doris*, *Helix*, *Unio*, *Ostrea*, *Pinctada*, *Sepia*, *Octopus*, *Nautilus*  
Echinodermates - *Pentaceros/Asterias*, *Ophiura*, *Clypeaster*, *Echinus*, *Cucumaria* and *Antedon*
2. Study of digestive system, septal nephridia and pharyngeal nephridia of earthworm
3. T.S. through pharynx, gizzard, and typhlosolar intestine of earthworm
4. Mount of mouth parts and dissection of digestive system and nervous system of *Periplaneta*\*
5. To submit a Project Report on any related topic to larval forms (crustacean, mollusc and echinoderm)

**Note:** Classification to be followed from “Ruppert and Barnes (2006) *Invertebrate Zoology*, 8<sup>th</sup> edition, Holt Saunders International Edition”

### SUGGESTED READINGS

- ◆ Ruppert and Barnes, R.D. (2006). *Invertebrate Zoology*, VIII Edition. Holt Saunders International Edition
- ◆ Barnes, R.S.K., Calow, P., Olive, P. J. W., Golding, D.W. and Spicer, J.I. (2002). *The Invertebrates: A New Synthesis*, III Edition, Blackwell Science
- ◆ Barrington, E.J.W. (1979). *Invertebrate Structure and Functions*. II Edition, E.L.B.S. and Nelson

## ZOC 2.2: CELL BIOLOGY

### THEORY

(Credits 4)

#### Unit 1: Overview of Cells and Plasma Membrane

10

Prokaryotic and Eukaryotic cells, Virus, Viroids, Mycoplasma, Prions  
Various models of plasma membrane structure  
Transport across membranes: Active and Passive transport, Facilitated transport, Cell junctions:  
Tight junctions, Desmosomes, Gap junctions

#### Unit 2: Endomembrane System

10

Structure and Functions: Endoplasmic Reticulum, Golgi Apparatus, Lysosomes

#### Unit 3: Mitochondria, Peroxisomes and Cytoskeleton

16

Mitochondria: Structure, Semi-autonomous nature, Endosymbiotic hypothesis; Mitochondrial  
Respiratory Chain, Chemi-osmotic hypothesis; Peroxisome  
Structure and Functions: Microtubules, Microfilaments and Intermediate filaments

#### Unit 4: Nucleus

12

Structure of Nucleus: Nuclear envelope, Nuclear pore complex, Nucleolus, Chromatin:  
Euchromatin and Hetrochromatin and packaging (nucleosome)

#### Unit 5: Cell Division and Cell Signalling

12

Mitosis, Meiosis, Cell cycle and its regulation;  
GPCR and Role of second messenger (cAMP)

### PRACTICAL

(Credits 2)

1. Preparation of temporary stained squash of onion root tip to study various stages of mitosis
2. Study of various stages of meiosis.
3. Preparation of permanent slide to show the presence of Barr body in human female blood cells/cheek cells.
4. Preparation of permanent slide to demonstrate:
  - i DNA by Feulgen reaction
  - ii DNA and RNA by MGP
  - iii Mucopolysaccharides by PAS reaction
  - iv Proteins by Mercurobromophenol blue/Fast Green

### SUGGESTED READINGS

- ◆ Karp, G. (2010). *Cell and Molecular Biology: Concepts and Experiments*. VI Edition. John Wiley and Sons. Inc.
- ◆ De Robertis, E.D.P. and De Robertis, E.M.F. (2006). *Cell and Molecular Biology*. VIII Edition. Lippincott Williams and Wilkins, Philadelphia.
- ◆ Cooper, G.M. and Hausman, R.E. (2009). *The Cell: A Molecular Approach*. V Edition. ASM Press and Sunderland, Washington, D.C.; Sinauer Associates, MA.
- ◆ Becker, W.M., Kleinsmith, L.J., Hardin. J. and Bertoni, G. P. (2009). *The World of the Cell*. VII Edition. Pearson Benjamin Cummings Publishing, San Francisco.
- ◆ Bruce Albert, Bray Dennis, Levis Julian, Raff Martin, Roberts Keith and Watson James (2008). *Molecular Biology of the Cell*, V Edition, Garland publishing Inc., New York and London.

## ZOC 3.1: DIVERSITY OF CHORDATA

### THEORY

(Credits 4)

- Unit 1: Introduction to Chordates and Protochordata** **10**  
General characteristics and outline classification of chordates.  
General characteristics of Hemichordata, Urochordata and Cephalochordata  
Study of larval forms in protochordates; Retrogressive metamorphosis in Urochordata.
- Unit 2: Origin of Chordata and Agnatha** **5**  
Echinoderm theory of origin of chordates;  
Advanced features of vertebrates over Protochordata;  
General characteristics and classification of cyclostomes up to class.
- Unit 3: Pisces and Amphibia** **14**  
General characteristics of Chondrichthyes and Osteichthyes, classification up to orders; Migration, osmoregulation and parental care in fishes.  
Origin of *Tetrapoda* (Evolution of terrestrial ectotherms); General characteristics and classification up to order; Parental care in Amphibians
- Unit 4: Reptilia and Aves** **15**  
General characteristics and classification up to order; Affinities of *Sphenodon*; Poison apparatus and Biting mechanism in snakes  
General characteristics and classification up to order *Archaeopteryx*—a connecting link; Principles and aerodynamics of flight, Flight adaptations and Migration in birds.
- Unit 5: Mammals and Zoogeography** **16**  
General characters and classification up to order; Affinities of Prototheria;  
Adaptive radiation with reference to locomotory appendages;  
Zoogeographical realms, Theories pertaining to distribution of animals, Plate tectonic and Continental drift theory, distribution of vertebrates in different realms.

## PRACTICAL

(Credits 2)

### 1. Protochordata

Balanoglossus, Herdmania, Branchiostoma, Colonial Urochordata Sections of Balanoglossus through proboscis and branchiogenital regions, Sections of Amphioxus through pharyngeal, intestinal and caudal regions. Permanent slide of Herdmania spicules

### 2. Agnatha

Petromyzon, Myxine

### 3. Fishes

Scoliodon, Sphyrna, Pristis, Torpedo, Chimaera, Mystus, Heteropneustes, Labeo, Exocoetus, Echeneis, Anguilla, Hippocampus, Tetrodon/ Diodon, Anabas, Flat fish

### 4. Amphibia

Ichthyophis/Ureotyphlus, Necturus, Bufo, Hyla, Alytes, Salamandra

### 5. Reptilia

Chelone, Trionyx, Hemidactylus, Varanus, Uromastix, Chamaeleon, Ophiosaurus, Draco, Bungarus, Vipera, Naja, Hydrophis, Zamenis, Crocodylus Key for Identification of poisonous and non-poisonous snakes

### 6. Aves

Study of six common birds from different orders. Types of beaks and claws

### 7. Mammalia

Sorex, Bat (Insectivorous and Frugivorous), Funambulus, Loris, Herpestes, Erinaceous.

Mount of weberian ossicles of Mystus, pecten from Fowl head Dissection of Fowl head (Dissections and mounts subject to permission)

Power point presentation on study of any two animals from two different classes by students (may be included if dissections not given permission)

Classification from Young, J. Z. (2004) to be followed SUGGESTED READINGS

- ◆ Young, J. Z. (2004). The Life of Vertebrates. III Edition. Oxford university press.
- ◆ Pough H. Vertebrate life, VIII Edition, Pearson International.
- ◆ Darlington P.J. The Geographical Distribution of Animals, R.E. Krieger Pub Co.
- ◆ Hall B.K. and Hallgrimsson B. (2008). Strickberger's Evolution. IV Edition. Jones and Bartlett Publishers Inc.

## ZOC 3.2: ANIMAL PHYSIOLOGY: CONTROLLING AND COORDINATING SYSTEMS

### THEORY

(Credits 4)

#### Unit 1: Tissues, Bone and Cartilage

10

Structure, location, classification and functions of epithelial tissue, connective tissue, muscular tissue and nervous tissue; Structure and types of bones and cartilages, Ossification, bone growth and resorption.

#### Unit 2: Nervous System

10

Structure of neuron, resting membrane potential, Origin of action potential and its propagation across the myelinated and unmyelinated nerve fibers; Types of synapse; Synaptic transmission and, Neuromuscular junction; Reflex action and its types - reflex arc; Physiology of hearing and vision.

#### Unit 3: Muscle

12

Histology of different types of muscle; Ultra structure of skeletal muscle; Molecular and chemical basis of muscle contraction; Characteristics of muscle twitch; Motor unit, summation and tetanus.

#### Unit 4: Reproductive System

10

Histology of testis and ovary; Physiology of male and female reproduction; Puberty, Methods of contraception in male and female.

#### Unit 5: Endocrine System

18

Histology of endocrine glands - pineal, pituitary, thyroid, parathyroid, pancreas, adrenal; Hypothalamus (neuroendocrine gland) - neuroendocrine control of anterior pituitary and endocrine system.

### PRACTICALS

(Credits 2)

1. Recording of simple muscle twitch with electrical stimulation (or Virtual)
2. Demonstration of the unconditioned reflex action (Deep tendon reflex such as knee jerk reflex)
3. Preparation of temporary mounts: Squamous epithelium, Striated muscle fibres and nerve cells
4. Study of permanent slides of Mammalian skin, Cartilage, Bone, Spinal cord, Nerve cell, Pituitary, Pancreas, Testis, Ovary, Adrenal, Thyroid and Parathyroid
5. Microtomy: Preparation of permanent slide of any five mammalian (Goat/white rat) tissues

(\*Subject to UGC guidelines)

### SUGGESTED BOOKS

- ◆ Guyton, A.C. & Hall, J.E. (2006). Textbook of Medical Physiology. XI Edition. Hecourt Asia PTE Ltd. /W.B. Saunders Company.
- ◆ Tortora, G.J. & Grabowski, S. (2006). Principles of Anatomy & Physiology. XI Edition John Wiley & sons
- ◆ Victor P. Eroschenko. (2008). diFiore's Atlas of Histology with Functional correlations. XII Edition. Lippincott W. & Wilkins.

## ZOC 3.3: FUNDAMENTALS OF BIOCHEMISTRY

### THEORY

(CREDITS 4)

**Unit 1: Carbohydrates:** Structure and Biological importance: Monosaccharides, Disaccharides, Polysaccharides and Glycoconjugates

**Unit 2: Lipids:** Structure and Significance: Physiologically important saturated and unsaturated fatty acids, Tri-acylglycerols, Phospholipids, Glycolipids, Steroids

**Unit 3: Proteins:** Amino Acids: Structure, Classification and General properties of  $\alpha$ -amino acids; Physiological importance of essential and non-essential  $\alpha$ -amino acids **Proteins:** Bonds stabilizing protein structure; Levels of organization in proteins; Denaturation; Introduction to simple and conjugate proteins

**Unit 4: Nucleic Acids:** Structure: Purines and pyrimidines, Nucleosides, Nucleotides, Nucleic acids Cot Curves: Base pairing, Denaturation and Renaturation of DNA Types of DNA and RNA, Complementarity of DNA, Hypo-Hyperchromaticity of DNA

**Unit 5: Enzymes:** Nomenclature and classification: Cofactors; Specificity of enzyme action; Isozymes; Mechanism of enzyme action; Enzyme kinetics; Factors affecting rate of enzyme-catalyzed reactions; Enzyme inhibition; Allosteric enzymes and their kinetics; Regulation of enzyme action

### PRACTICAL

(CREDITS 2)

1. Qualitative tests of functional groups in carbohydrates, proteins and lipids.
2. Paper chromatography of amino acids.
3. Action of salivary amylase under optimum conditions.
4. Effect of pH, temperature and inhibitors on the action of salivary amylase.
5. Demonstration of proteins separation by SDS-PAGE.

### SUGGESTED READING

- Cox, M.M and Nelson, D.L. (2008). *Lehninger's Principles of Biochemistry*, V Edition, W.H. Freeman and Co., New York.
- Berg, J.M., Tymoczko, J.L. and Stryer, L. (2007). *Biochemistry*, VI Edition, W.H. Freeman and Co., New York.
- Murray, R.K., Bender, D.A., Botham, K.M., Kennelly, P.J., Rodwell, V.W. and Well, P.A. (2009). *Harper's Illustrated Biochemistry*, XXVIII Edition, International Edition, The McGraw- Hill Companies Inc.
- Hames, B.D. and Hooper, N.M. (2000). *Instant Notes in Biochemistry*, II Edition, BIOS Scientific Publishers Ltd., U.K.
- Watson, J.D., Baker, T.A., Bell, S.P., Gann, A., Levine, M. and Losick, R. (2008). *Molecular Biology of the Gene*, VI Edition, Cold Spring Harbor Lab. Press, Pearson Pub.

## ZOC 4.1: COMPARATIVE ANATOMY OF VERTEBRATES

### THEORY

(CREDITS 4)

**Unit 1: Integumentary System and Skeletal System:** Structure, functions and derivatives of integument  
Overview of axial and appendicular skeleton, Visceral Arches

**Unit2: Digestive System and Respiratory System**

Alimentary canal and associated glands, dentition, Skin, gills, lungs and air sacs; Accessory respiratory organs

**Unit 3: Circulatory System and Urinogenital System:** General plan of circulation, evolution of heart and aortic arches Succession of kidney, Evolution of urinogenital ducts

**Unit 4: Nervous System:** Comparative account of brain Autonomic nervous system, Spinal cord, Cranial nerves in mammals

**Unit 5: Sense Organs:** Classification of receptors Brief account of visual and auditory receptors in man

### PRACTICAL

(CREDITS 2)

1. Study of placoid, cycloid and ctenoid scales through permanent slides/photographs
2. Disarticulated skeleton of Frog, *Varanus*, Fowl, Rabbit
3. Mammalian skulls: One herbivorous and one carnivorous animal
4. Dissection of rat to study arterial and urinogenital system (subject to permission)
5. Study of structure of any two organs (heart, lung, kidney, eye and ear) from video recording (may be included if dissection not permitted)
6. Project on skeletal modifications in vertebrates (may be included if dissection not permitted)

### SUGGESTED READINGS

- Kardong, K.V. (2005) *Vertebrates' Comparative Anatomy, Function and Evolution*. IV Edition. McGraw-Hill Higher Education
- Kent, G.C. and Carr R.K. (2000). *Comparative Anatomy of the Vertebrates*. IX Edition. The McGraw-Hill Companies
- Hilderbrand, M and Gaslow G.E. *Analysis of Vertebrate Structure*, John Wiley and Sons
- Walter, H.E. and Sayles, L.P; *Biology of Vertebrates*, Khosla Publishing House



## ZOC 4.2: ANIMAL PHYSIOLOGY: LIFE SUSTAINING SYSTEMS

### THEORY

(Credits 4)

#### Unit 1: Physiology of Digestion

14

Structural organization and functions of gastrointestinal tract and associated glands; Mechanical and chemical digestion of food; Absorptions of lipids, water, minerals and vitamins; Hormonal control of secretion of enzymes in Gastrointestinal tract.

#### Unit 2: Physiology of Respiration

12

Histology of trachea and lung; Mechanism of respiration; Respiratory volumes and capacities; Respiratory pigments, Dissociation curves and the factors influencing it; Carbon monoxide poisoning; Control of respiration

#### Unit 3: Renal Physiology

8

Structure of kidney and its functional unit; Mechanism of urine formation; Regulation of water balance; Regulation of acid-base balance

#### Unit 4: Blood

14

Components of blood and their functions; Structure and functions of Haemoglobin  
Haemostasis: Blood clotting system, Complement system & Fibrinolytic system, Haemopoiesis  
Blood groups: Rh factor, ABO and MN

#### Unit 5: Physiology of Heart

12

Coronary circulation; Structure and working of conducting myocardial fibers. Origin and conduction of cardiac impulses, Cardiac output and its regulation. Electrocardiogram, Blood pressure and its regulation

### PRACTICALS

(CREDITS 2)

1. Determination of ABO Blood group and Rh factor
2. Enumeration of red blood cells
3. Estimation of haemoglobin using Sahli's haemoglobinometer
4. Preparation of haemin crystals
5. Recording of blood pressure using a sphygmomanometer
6. Examination of sections of mammalian oesophagus, stomach, duodenum, ileum, rectum liver, trachea, lung, kidney

### SUGGESTED READINGS

- Guyton, A.C. & Hall, J.E. (2006). Textbook of Medical Physiology. XI Edition. Herculat Asia PTE Ltd. W.B. Saunders Company.
- Tortora, G.J. & Grabowski, S. (2006). Principles of Anatomy & Physiology. XI Edition John Wiley & sons,
- Victor P. Eroschenko. (2008). diFiore's Atlas of Histology with Functional correlations. XII Edition. Lippincott W. & Wilkins.
- Vander A, Sherman J. and Luciano D. (2014). Vander's Human Physiology: The Mechanism of Body Function. XIII Edition, McGraw Hills

## ZOC 4.3: BIOCHEMISTRY OF METABOLIC PROCESSES

### THEORY

(CREDITS 4)

#### Unit 1: Overview of Metabolism

10

Catabolism vs Anabolism, Stages of catabolism, Compartmentalization of metabolic pathways, Shuttle systems and membrane transporters; ATP as "Energy Currency of cell"; coupled reactions; Intermediary metabolism and regulatory mechanisms

#### Unit 2: Carbohydrate Metabolism

16

Sequence of reactions and regulation of glycolysis, Citric acid cycle, Phosphate pentose pathway, Gluconeogenesis, Glycogenolysis and Glycogenesis

#### Unit 3: Lipid Metabolism

14

$\beta$ -oxidation and omega -oxidation of saturated fatty acids with even and odd number of carbon atoms; Biosynthesis of palmitic acid; Ketogenesis

#### Unit 4: Protein Metabolism

10

Catabolism of amino acids: Transamination, Deamination, Urea cycle; Fate of C-skeleton of Glucogenic and Ketogenic amino acids

#### Unit 5: Oxidative Phosphorylation

10

Redox systems; Review of mitochondrial respiratory chain, Inhibitors and un-couplers of Electron Transport System

### PRACTICALS

(CREDITS 2)

1. Estimation of total protein in given solutions by Lowry's method.
2. Detection of SGOT and SGPT or GST and GSH in serum/ tissue
3. To study the enzymatic activity
4. To perform the Acid and Alkaline phosphatase assay from serum/ tissue.

### SUGGESTED READINGS

- Cox, M.M and Nelson, D.L. (2008). *Lehninger Principles of Biochemistry*, V Edition, W.H. Freeman and Co., New York.
- Berg, J.M., Tymoczko, J.L. and Stryer, L. (2007). *Biochemistry*, VI Edition, W.H. Freeman and Co., New York.
- Murray, R.K., Bender, D.A., Botham, K.M., Kennelly, P.J., Rodwell, V.W. and Well, P.A. (2009). *Harper's Illustrated Biochemistry*, XXVIII Edition, International Edition, The McGraw-Hill Companies Inc.
- Hames, B.D. and Hooper, N.M. (2000). *Instant Notes in Biochemistry*, II Edition, BIOS Scientific Publishers Ltd., U.K.

## ZOC 5.1: MOLECULAR BIOLOGY

### THEORY

(CREDITS 4)

#### Unit 1: Nucleic Acids and DNA Replication

16

Salient features of DNA and RNA  
Watson and Crick model of DNA

DNA Replication in prokaryotes and eukaryotes, mechanism of DNA replication, Semi-conservative, bidirectional and semi-discontinuous replication, RNA priming

#### Unit 2: Transcription

10

RNA polymerase and transcription Unit, mechanism of transcription in prokaryotes and eukaryotes, synthesis of rRNA and mRNA, transcription Factors

#### Unit 3: Translation

12

Genetic code, Degeneracy of the genetic code and Wobble Hypothesis; Process of protein synthesis in prokaryotes: Ribosome structure and assembly in prokaryotes, fidelity of protein synthesis, aminoacyl tRNA synthetases and charging of tRNA; Proteins involved in initiation, elongation and termination of polypeptide chain

#### Unit 4: Post Transcriptional Modifications and Processing of Eukaryotic RNA and DNA Repair Mechanisms

12

Structure of globin mRNA; Split genes: concept of introns and exons, splicing mechanism, alternative splicing, exon shuffling, and RNA editing, Processing of tRNA. Pyrimidine dimerization and mismatch repair

#### Unit 5: Gene Regulation

10

Transcription regulation in prokaryotes: Principles of transcriptional regulation with examples from *lac* operon and *trp* operon; Transcription regulation in eukaryotes: Activators, repressors, enhancers, silencer elements; Gene silencing, Genetic imprinting

### PRACTICAL

(CREDITS 2)

1. Study of Polytene chromosomes from Chironomous / *Drosophila* larvae
2. Preparation of liquid culture medium (LB) and raise culture of *E. coli*
3. Preparation of solid culture medium (LB) and growth of *E. coli* by spreading and streaking
4. Demonstration of antibiotic sensitivity/resistance of *E. coli* to antibiotic pressure and interpretation of results
5. Quantitative estimation of RNA using Orcinol reaction
6. Study and interpretation of electron micrographs/ photograph showing
  - (a) DNA replication
  - (b) Transcription
  - (c) Split genes

### SUGGESTED READINGS

- Becker, W.M., Kleinsmith, L.J., Hardin. J. and Bertoni, G. P. (2009). *The World of the Cell*. VII Edition. Pearson Benjamin Cummings Publishing, San Francisco.
- Bruce Alberts, Alexander Johnson, Julian Lewis, Martin Raff, Keith Roberts, Peter Walter: *Molecular Biology of the Cell*, IV Edition.
- Cooper G. M. and Robert E. Hausman R. E. *The Cell: A Molecular Approach*, V Edition, ASM Press and Sinauer Associates.
- De Robertis, E.D.P. and De Robertis, E.M.F. (2006). *Cell and Molecular Biology*. VIII Edition. Lippincott Williams and Wilkins, Philadelphia.
- Karp, G. (2010) *Cell and Molecular Biology: Concepts and Experiments*. VI Edition. John Wiley and Sons. Inc.
- Lewin B. (2008). *Gene XI*, Jones and Bartlett
- McLennan A., Bates A., Turner, P. and White M. (2015). *Molecular Biology* IV Edition. GS, Taylor and Francis Group, New York and London.

## ZOC 5.2: PRINCIPLES OF GENETICS

### THEORY

(CREDITS 4)

#### Unit 1: Mendelian Genetics and its Extension

8

Principles of inheritance, Incomplete dominance and co-dominance, Multiple alleles, Lethal alleles, Epistasis, Pleiotropy, Sex-linked, sex- influenced and sex-limited characters inheritance.

#### Unit 2: Linkage, Crossing Over and Chromosomal Mapping

12

Linkage and crossing over, Cytological basis of crossing over, Molecular mechanisms of crossing over including models of recombination, Two factor and three factor crosses, Interference and coincidence, Somatic cell hybridization.

#### Unit 3: Mutations

10

Types of gene mutations (Classification), Types of chromosomal aberrations (Classification, figures and with one suitable example of each), Molecular basis of mutations in relation to UV light and chemical mutagens; Detection of mutations: CLB method, attached *X* method.

#### Unit 4: Sex Determination, Extra-chromosomal Inheritance and Polygenic Inheritance

13

Chromosomal mechanisms of sex determination in *Drosophila* and Man Criteria for extra-chromosomal inheritance, Mitochondrial mutations in *Saccharomyces*, Infective heredity in *Paramecium* and Maternal effects Polygenic inheritance with suitable examples

#### Unit 5: Recombination in Bacteria and Viruses and Transposable Genetic Elements

17

Conjugation, Transformation, Transduction in Bacteriophage  
Transposons in bacteria, Transposons in humans

### PRACTICALS

(CREDITS 2)

1. To study the Mendelian laws and gene interactions.
2. Chi-square analyses using seeds/beads/*Drosophila*.
3. Linkage maps based on data from *Drosophila* crosses.
4. Study of human karyotype (normal and abnormal).
5. Pedigree analysis of some human inherited traits.

### SUGGESTED READINGS

- Gardner, E.J., Simmons, M.J., Snustad, D.P. (2008). *Principles of Genetics*. VIII Edition. Wiley India
- Snustad, D.P., Simmons, M.J. (2009). *Principles of Genetics*. V Edition. John Wiley and Sons Inc
- Klug, W.S., Cummings, M.R., Spencer, C.A. (2012). *Concepts of Genetics*. X Edition. Benjamin Cummings
- Russell, P. J. (2009). *Genetics- A Molecular Approach*. III Edition. Benjamin Cummings
- Griffiths, A.J.F., Wessler, S.R., Lewontin, R.C. and Carroll, S.B. *Introduction to Genetic Analysis*. IX Edition. W. H. Freeman and Co
- Fletcher H. and Hickey I. (2015). *Genetics*. IV Edition. GS, Taylor and Francis Group, New York and London.

## ZOC 6.1: DEVELOPMENTAL BIOLOGY

### THEORY

(CREDITS 4)

#### Unit 1: Introduction

4

Historical perspective and basic concepts: Phases of development, Cell-Cell interaction, Pattern formation, Differentiation and growth, Differential gene expression, Cytoplasmic determinants and asymmetric cell division

#### Unit 2: Early Embryonic Development

28

Gametogenesis, Spermatogenesis, Oogenesis; Types of eggs, Egg membranes; Fertilization (External and Internal): Changes in gametes, Blocks to polyspermy; Planes and patterns of cleavage; Types of Blastula; Fate maps (including Techniques); Early development of frog and chick up to gastrulation; Embryonic induction and organizers

#### Unit 3: Late Embryonic Development

8

Fate of Germ Layers; Extra-embryonic membranes in birds; Implantation of embryo in humans, Placenta (Structure, types and functions of placenta)

#### Unit 4: Post Embryonic Development

12

Metamorphosis: Changes, hormonal regulations in amphibians and insects; Regeneration: Modes of regeneration, epimorphosis, morphallaxis and compensatory regeneration (with one example each); Ageing: Concepts and Theories

#### Unit 5: Implications of Developmental Biology

8

Teratogenesis: Teratogenic agents and their effects on embryonic development; *In vitro* fertilization, Stem cell (ESC), Amniocentesis

### PRACTICALS

(CREDITS 2)

1. Study of whole mounts and sections of developmental stages of frog through permanent slides: Cleavage stages, blastula, gastrula, neurula, tail-bud stage, tadpole (external and internal gill stages)
2. Study of whole mounts of developmental stages of chick through permanent slides: Primitive streak (13 and 18 hours), 21, 24, 28, 33, 36, 48, 72, and 96 hours of incubation (Hamilton and Hamburger stages)
3. Study of different sections of placenta (photomicrograph/ slides)
4. Project report on *Drosophila* culture/chick embryo development

## SUGGESTED READINGS

- Gilbert, S. F. (2010). Developmental Biology, IX Edition, Sinauer Associates, Inc., Publishers, Sunderland, Massachusetts, USA
- Balinsky B. I. and Fabian B. C. (1981). An Introduction to Embryology, V Edition, International Thompson Computer Press
- Carlson, R. F. Patten's Foundations of Embryology
- Kalthoff (2008). Analysis of Biological Development, II Edition, McGraw-Hill Publishers
- Lewis Wolpert (2002). Principles of Development. II Edition, Oxford University Press

## ZOC 6.2: EVOLUTIONARY BIOLOGY

### THEORY

(CREDITS 4)

#### Unit 1

11

Life's Beginnings: Chemogeny, RNA world, Biogeny, Origin of photosynthesis, Evolution of eukaryotes  
Historical review of evolutionary concept: Lamarckism, Darwinism, Neo-Darwinism

#### Unit 2

10

Evidences of Evolution: Fossil record (types of fossils, transitional forms, geological time scale, evolution of horse, three domains of life, neutral theory of molecular evolution,

#### Unit 3

13

Population genetics: Hardy-Weinberg Law (statement and derivation of equation, application of law to human Population); Natural selection (concept of fitness, selection coefficient, derivation of one unit of selection for a dominant allele, genetic load, mechanism of working, types of selection, Genetic Drift (mechanism, founder's effect, bottleneck phenomenon; Role of Migration and Mutation in changing allele frequencies

#### Unit 4

13

Product of evolution: Micro evolutionary changes (inter-population variations, clines, races, Species concept, Isolating mechanisms, modes of speciation—allopatric, sympatric, Adaptive radiation / macroevolution (exemplified by Galapagos finches

#### Unit 5

12

Origin and evolution of man, Unique hominin characteristics contrasted with primate characteristics, primate phylogeny from *Dryopithecus* leading to *Homo sapiens*, molecular analysis of human origin  
Phylogenetic trees, Multiple sequence alignment, construction of phylogenetic trees, interpretation of trees

### PRACTICALS

(CREDITS 2)

1. Study of fossils from models/ pictures
2. Study of homology and analogy from suitable specimens
3. Study and verification of Hardy-Weinberg Law by chi square analysis
4. Demonstration of role of natural selection and genetic drift in changing allele frequencies using simulation studies
5. Graphical representation and interpretation of data of height/ weight of a sample of 100 humans in relation to their age and sex.
6. Construction of phylogenetic trees with the help of bioinformatics tools (Clustal X, Phylip, NJ) and its interpretation.

### SUGGESTED READINGS

- Ridley, M (2004) Evolution III Edition Blackwell publishing
- Hall, B.K. and Hallgrimson, B (2008). Evolution IV Edition. Jones and Barlett Publishers.
- Campbell, N.A. and Reece J.B (2011). Biology. IX Edition. Pearson, Benjamin, Cummings.
- Douglas, J. Futuyma (1997). Evolutionary Biology. Sinauer Associates.
- Snustad. S Principles of Genetics.
- Pevsner, J (2009). Bioinformatics and Functional Genomics. II Edition Wiley-Blackwell

## DISCIPLINE CENTRIC ELECTIVE COURSES

### ZOD 5.3: IMMUNOLOGY

#### THEORY

(Credits 4)

#### Unit 1: Overview of Immune System

12

Historical perspective of Immunology, Early theories of Immunology, Cells and organs of the Immune system

#### Unit 2: Innate and Adaptive Immunity

12

Anatomical barriers, Inflammation, Cell and molecules involved in innate immunity, Adaptive immunity (Cell mediated and humoral), Passive: Artificial and natural Immunity, Active: Artificial and natural Immunity, Immune dysfunctions (brief account of autoimmunity with reference to Rheumatoid Arthritis and tolerance, AIDS).

#### Unit 4: Immunoglobulins

14

Structure and functions of different classes of immunoglobulins, Antigen-antibody interactions, Immunoassays (ELISA and RIA), Hybridoma technology: Monoclonal antibodies in therapeutics and diagnosis

#### Unit 5: Major Histocompatibility Complex and Cytokines

10

Structure and functions of MHC molecules. Endogenous and exogenous pathways of antigen processing and presentation. Properties and functions of cytokines, Therapeutics Cytokines

#### Unit 5: Complement System, Hypersensitivity and Vaccines

12

Components and pathways of complement activation.

Gell and Coombs' classification and brief description of various types of Hypersensitivities Various types of vaccines.

## PRACTICAL

(Credits 2)

- 1\*. Demonstration of lymphoid organs.
  2. Histological study of spleen, thymus and lymph nodes through slides/ photographs
  3. Preparation of stained blood film to study various types of blood cells.
  4. Ouchterlony's double immuno-diffusion method.
  5. ABO blood group determination.
  - 6\*. Cell counting and viability test from splenocytes of farm bred animals/cell lines.
  7. Demonstration of :
    - a. ELISA
    - b. Immunoelectrophoresis
- \* The experiments can be performed depending upon usage of animals in UG courses.

## SUGGESTED READINGS

- Kindt, T. J., Goldsby, R.A., Osborne, B. A. and Kuby, J (2006). *Immunology*, VI Edition. W.H. Freeman and Company.
- David, M., Jonathan, B., David, R. B. and Ivan R. (2006). *Immunology*, VII Edition, Mosby, Elsevier Publication.
- Abbas, K. Abul and Lechtman H. Andrew (2003.) *Cellular and Molecular Immunology*. V Edition. Saunders Publication.

## ZOD 5.4: FISH AND FISHERIES

### THEORY

(Credits 4)

#### UNIT 1: Introduction and Classification:

6

General description of fish; Account of systematic classification of fishes (upto classes); Classification based on feeding habit, habitat and manner of reproduction.

#### UNIT 2: Morphology and Physiology:

18

Types of fins and their modifications; Locomotion in fishes; Types of Scales, Use of scales in Classification and determination of age of fish; Gills and gas exchange; Swim Bladder: Types and role in Respiration; Osmoregulation in Elasmobranchs; Reproductive strategies (special reference to Indian fishes); Electric organs; Parental care; Migration

#### UNIT 3: Fisheries

12

Inland Fisheries; Marine Fisheries; Environmental factors influencing the seasonal variations in fish catches in the Arabian Sea and the Bay of Bengal; Fishing crafts and Gears; Depletion of fisheries resources; Application of remote sensing and GIS in fisheries; Fisheries law and regulations

#### Unit 4: Aquaculture

20

Sustainable Aquaculture; Extensive, semi-intensive and intensive culture of fish; Pen and cage culture; Polyculture; Composite fish culture; Induced breeding of fish; Management of finfish hatcheries; Preparation and maintenance of fish aquarium; Preparation of compound diets for fish; Role of water quality in aquaculture; Fish diseases: Bacterial, viral and parasitic; Preservation and processing of harvested fish, Fishery by-products

#### UNIT 5: Fish in research

4

Transgenic fish, Zebrafish as a model organism in research



## PRACTICAL

(Credits 2)

1. Morphometric and meristic characters of fishes
2. Study of Petromyzon, Myxine, Pristis, Chimaera, Exocoetus, Hippocampus, Gambusia, Labeo, Heteropneustes, Anabas
3. Study of different types of scales (through permanent slides/ photographs).
4. Study of crafts and gears used in Fisheries
5. Water quality criteria for Aquaculture: Assessment of pH, conductivity, Total solids, Total dissolved solids
6. Study of air breathing organs in Channa, Heteropneustes, Anabas and Clarias
7. Demonstration of induced breeding in Fishes (video)
8. Demonstration of parental care in fishes (video)
9. Project Report on a visit to any fish farm/ pisciculture unit/ Zebrafish rearing Lab.

## SUGGESTED READINGS

- Q Bone and R Moore, Biology of Fishes, Talyor and Francis Group, CRC Press, U.K.
- D. H. Evans and J. D. Claiborne, The Physiology of Fishes, Taylor and Francis Group, CRC Press, UK
- von der Emde, R.J. Mogdans and B.G. Kapoor. The Senses of Fish: Adaptations for the Reception of Natural Stimuli, Springer, Netherlands
- C.B.L. Srivastava, Fish Biology, Narendra Publishing House
- J.R. Norman, A history of Fishes, Hill and Wang Publishers
- S.S. Khanna and H.R. Singh, A text book of Fish Biology and Fisheries, Narendra Publishing House

## ZOC 6.3: REPRODUCTIVE BIOLOGY

### THEORY

#### Unit 1: Reproductive Endocrinology

(CREDITS 4)

Gonadal hormones and mechanism of hormone action, steroids, glycoprotein hormones, and prostaglandins, hypothalamo – hypophyseal – gonadal axis, regulation of gonadotrophin secretion in male and female; Reproductive System: Development and differentiation of gonads, genital ducts, external genitalia, mechanism of sex differentiation.

#### Unit 2: Functional anatomy of male reproduction

Outline and histological of male reproductive system in rat and human; Testis: Cellular functions, germ cell, system cell renewal; Spermatogenesis: kinetics and hormonal regulation; Androgen synthesis and metabolism; Epididymal function and sperm maturation; Accessory glands functions; Sperm transportation in male tract

#### Unit 3: Functional anatomy of female reproduction

Outline and histological of female reproductive system in rat and human; Ovary: folliculogenesis, ovulation, corpus luteum formation and regression; Steroidogenesis and secretion of ovarian hormones; Reproductive cycles (rat and human) and their regulation, changes in the female tract

#### Unit 4: Fertilization

Ovum transport in the fallopian tubes; Sperm transport in the female tract, fertilization; Hormonal control of implantation; Hormonal regulation of gestation, pregnancy diagnosis, foeto – maternal relationship; Mechanism of parturition and its hormonal regulation; Lactation and its regulation

#### Unit 5: Reproductive Health

Infertility in male and female: causes, diagnosis and management; Assisted Reproductive Technology: sex selection, sperm banks, frozen embryos, in vitro fertilization, ET, EFT, IUT, ZIFT, GIFT, ICSI, PROST; Modern contraceptive technologies; Demographic terminology used in family planning

**PRACTICAL****(CREDITS 2)**

1. Study of animal house: set up and maintenance of animal house, breeding techniques, care of normal and experimental animals.
2. Examination of vaginal smear rats from live animals.
3. Surgical techniques: principles of surgery in endocrinology. Ovaryectomy, hysterectomy, castration and vasectomy in rats.
4. Examination of histological sections from photomicrographs/ permanent slides of rat/human: testis, epididymis and accessory glands of male reproductive systems; Sections of ovary, fallopian tube, uterus (proliferative and secretory stages), cervix and vagina.
5. Human vaginal exfoliate cytology.
6. Sperm count and sperm motility in rat
7. Study of modern contraceptive devices

**SUGGESTED READINGS**

- Austin, C.R. and Short, R.V. reproduction in Mammals. Cambridge University Press.
- Degroot, L.J. and Jameson, J.L. (eds). Endocrinology. W.B. Saunders and Company.
- Knobil, E. et al. (eds). The Physiology of Reproduction. Raven Press Ltd.
- Hatcher, R.A. et al. The Essentials of Contraceptive Technology. Population Information Programme.

**ZOD 6.4: BIOLOGY OF INSECTA****THEORY****(Credits 4)****Unit 1: Introduction and Insect Taxonomy****8**

General Features of Insects

Distribution and Success of Insects on the Earth

Basis of insect classification; Classification of insects up to orders

**Unit 2: General Morphology of Insects****8**

External Features; Head – Eyes, Types of antennae, Mouth parts w.r.t. feeding Habits

Thorax: Wings and wing articulation, Types of Legs adapted to diverse habitat

Abdominal appendages and genitalia

**Unit 3: Physiology of Insects****28**

Structure and physiology of Insect body systems - Integumentary, digestive, excretory, circulatory, respiratory, endocrine, reproductive, and nervous system

Sensory receptors

Growth and metamorphosis

**Unit 4: Insect Society****6**

Group of social insects and their social life

Social organization and social behaviour (w.r.t. any one example)

**Unit 5: Insect Plant Interaction and Insects as Vectors**

Host-plant selection by phytophagous insects, Insects as plant pests

Insects as mechanical and Biological vectors, Brief discussion on houseflies and mosquitoes as important insect vectors

## PRACTICAL

(CREDITS 2)

1. Study of one specimen from each insect order
2. Study of different kinds of antennae, legs and mouth parts of insects
3. Study of head and sclerites of any one insect
4. Study of insect wings and their venation.
5. Study of insect spiracles
6. Methodology of collection, preservation and identification of insects.
7. Morphological studies of various castes of *Apis*
8. Study of any three insect pests and their damages
9. Study of any three beneficial insects and their products

**Field study of insects and submission of a project report on the insect diversity**

## SUGGESTED READINGS

- A general text book of entomology, Imms , A. D., Chapman & Hall, UK
- The Insects: Structure and function, Chapman, R. F., Cambridge University Press, UK
- Principles of Insect Morphology, Snodgrass, R. E., Cornell Univ. Press, USA
- Introduction to the study of insects, Borror, D. J., Triplehorn, C. A., and Johnson, N. F., M Saunders College Publication, USA
- The Insect Societies, Wilson, E. O., Harward Univ. Press, UK
- Host Selection by Phytophagous insects, Bernays, E. A., and Chapman, R. F., Chapman and Hall, New York, USA
- Physiological system in Insects, Klowden, M. J., Academic Press, USA
- The Insects, An outline of Entomology, Gullan, P. J. , and Cranston, P. S., Wiley Blackwell, UK □
- Insect Physiology and Biochemistry, Nation, J. L., CRC Press, USA

## GENERIC ELECTIVE COURSES

### ZOG 1.4: ENVIRONMENT AND PUBLIC HEALTH

#### THEORY

(Credits 4)

##### UNIT 1: Introduction

Sources of Environmental hazards, hazard identification and accounting, fate of toxic and persistent substances in the environment, dose Response Evaluation, exposure Assessment.

##### UNIT 2 Climate Change

Greenhouse gases and global warming, Acid rain, Ozone layer destruction, Effect of climate change on public health

##### Unit 3 Pollution

Air, water, noise pollution sources and effects, Pollution control

##### Unit 4 Waste Management Technologies

Sources of waste, types and characteristics, Sewage disposal and its management, Solid waste disposal, Biomedical waste handling and disposal, Nuclear waste handling and disposal, Waste from thermal power plants, Case histories on Bhopal gas tragedy, Chernobyl disaster, Seveso disaster and Three Mile Island accident and their aftermath.

##### Unit 5 Diseases

Causes, symptoms and control of tuberculosis, Asthma, Cholera, Minamata disease, typhoid

## PRACTICAL

(Credits 2)

1. To determine pH, Cl, SO<sub>4</sub>, NO<sub>3</sub> in soil and water samples from different locations.

### SUGGESTED BOOKS

- Cutter, S.L., Environmental Risk and Hazards, Prentice-Hall of India Pvt. Ltd., New Delhi, 1999.
- Kolluru Rao, Bartell Steven, Pitblado R and Stricoff “Risk Assessment and Management Handbook”, McGraw Hill Inc., New York, 1996.
- Kofi Asante Duah “Risk Assessment in Environmental management”, John Wiley and sons, Singapore, 1998.
- Kasperson, J.X. and Kasperson, R.E. and Kasperson, R.E., Global Environmental Risks, V.N. University Press, New York, 2003.
- Joseph F Louvar and B Diane Louver Health and Environmental Risk Analysis fundamentals with applications, Prentice Hall, New Jersey 1997.

## ZOG 2.4: ANIMAL DIVERSITY

### THEORY

(CREDITS 4)

<b>Unit 1. Protista, Porifera and Radiata</b>	<b>10</b>
General characters of Protozoa; Life cycle of Plasmodium General characters and canal system in Porifera General characters of Cnidarians and polymorphism	
<b>Unit 2. Aceolomates, Pseudocoelomates and Coelomate Protostomes</b>	<b>9</b>
General characters of Helminthes; Life cycle of Taenia solium General characters of Nemethehelminthes; Parasitic adaptations General characters of Annelida ; Metamerism.	
<b>Unit 3. Arthropoda, Mollusca and Coelomate Deuterostomes</b>	<b>10</b>
General characters. Social life in insects. General characters of mollusca; Pearl Formation General characters of Echinodermata, Water Vascular system in Starfish.	
<b>Unit 4. Protochordata, Pisces and Amphibia</b>	<b>10</b>
Salient features Osmoregulation, Migration of Fishes General characters, Adaptations for terrestrial life, Parental care in Amphibia.	
<b>Unit 5. Reptiles, Aves and Mammalia</b>	<b>16</b>
Amniotes; Origin of reptiles. Terrestrial adaptations in reptiles. The origin of birds; Flight adaptations Early evolution of mammals; Primates; Dentition in mammals.	

## PRACTICAL

(CREDITS 2)

### 1. Study of following specimens:

Non Chordates: Euglena, Noctiluca, Paramecium, Sycon, Physalia, Tubipora, Metridium, Taenia, Ascaris, Nereis, Aphrodite, Leech, Peripatus, Limulus, Hermitcrab, Daphnia, Millipede, Centipede, Beetle, Chiton, Dentalium, Octopus, Asterias, and Antedon.

Chordates: Balanoglossus, Amphioxus, Petromyzon, Pristis, Hippocampus, Labeo, Icthyophis/Uraeotyphlus, Salamander, Rhacophorus Draco, Uromastix, Naja, Viper, model of Archaeopteryx, any three common birds-(Crow, duck, Owl), Squirrel and Bat.

### 2. Study of following Permanent Slides:

Cross section of Sycon, Sea anemone and Ascaris(male and female). T. S. of Earthworm passing through pharynx, gizzard, and typhlosolar intestine. Bipinnaria and Pluteus larva.

### 3. Temporary mounts of

- Septal & pharyngeal nephridia of earthworm.
- Unstained mounts of Placoid, cycloid and ctenoid scales.

### 4. Dissections of

- Digestive and nervous system of Cockroach.
- Urinogenital system of Rat

## SUGGESTED BOOKS

- Barnes, R.D. (1992). Invertebrate Zoology. Saunders College Pub. USA.
- Ruppert, Fox and Barnes (2006) Invertebrate Zoology. A functional Evolutionary Approach 7th Edition, Thomson Books/Cole
- Campbell & Reece (2005). Biology, Pearson Education, (Singapore) Pvt. Ltd.
- Kardong, K. V. (2002). Vertebrates Comparative Anatomy. Function and Evolution. Tata McGraw Hill Publishing Company. New Delhi.
- Raven, P. H. and Johnson, G. B. (2004). Biology, 6th edition, Tata McGraw Hill Publications. New Delhi.

## ZOG 3.5 AQUATIC BIOLOGY

### THEORY

(Credits 4)

#### UNIT 1: Aquatic Biomes

Brief introduction of the aquatic biomes: Freshwater ecosystem (lakes, wetlands, streams and rivers), estuaries, intertidal zones, oceanic pelagic zone, marine benthic zone and coral reefs.

#### UNIT 2: Freshwater Biology

**Lakes:** Origin and classification, Lake as an Ecosystem, Lake morphometry, Physico-chemical Characteristics: Light, Temperature, Thermal stratification, Dissolved Solids, Carbonate, Bicarbonates, Phosphates and Nitrates, Turbidity; dissolved gases (Oxygen, Carbon dioxide).

**Streams:** Different stages of stream development, Physico-chemical environment, Adaptation of hill-stream fishes.

#### UNIT 3: Marine Biology

Salinity and density of Sea water, Continental shelf, Adaptations of deep sea organisms, Coral reefs, Sea weeds.

#### UNIT 4: Management of Aquatic Resources

Causes of pollution: Agricultural, Industrial, Sewage, Thermal and Oil spills, Eutrophication, Management and conservation (legislations), Sewage treatment Water quality assessment- BOD and COD.

#### UNIT 5: Nutrient cycle

Nutrient Cycles-Nitrogen, Sulphur and Phosphorous.

### PRACTICAL

(Credits 2)

1. Determine the area of a lake using graphimetric and gravimetric method.
2. Identify the important macrophytes, phytoplanktons and zooplanktons present in a lake ecosystem.
3. Determine the amount of Turbidity/transparency, Dissolved Oxygen, Free Carbon dioxide, Alkalinity (carbonates & bicarbonates) in water collected from a nearby lake/ water body.
4. Instruments used in limnology (Secchi disc, Van Dorn Bottle, Conductivity meter, Turbidity meter, PONAR grab sampler) and their significance.
5. A Project Report on a visit to a Sewage treatment plant/Marine bio-reserve/Fisheries Institutes.

### SUGGESTED READINGS

- Anathakrishnan : Bioresources Ecology 3<sup>rd</sup> Edition
- Goldman : Limnology, 2<sup>nd</sup> Edition
- Odum and Barrett : Fundamentals of Ecology, 5<sup>th</sup> Edition
- Pawlowski: Physicochemical Methods for Water and Wastewater Treatment, 1<sup>st</sup> Edition
- Wetzel : Limnology, 3<sup>rd</sup> edition
- Trivedi and Goyal : Chemical and biological methods for water pollution studies
- Welch : Limnology Vols. I-II

## ZOG 4.5 HUMAN PHYSIOLOGY

### THEORY

(CREDITS 4)

#### Unit 1: Digestion and Absorption of Food

12

Structure and function of digestive glands; Digestion and absorption of carbohydrates, fats and proteins; Nervous and hormonal control of digestion (*in brief*)

#### Unit 2: Functioning of Excitable Tissue (Nerve and Muscle)

10

Structure of neuron, Propagation of nerve impulse (myelinated and non-myelinated nerve fibre); Structure of skeletal muscle, Mechanism of muscle contraction (Sliding filament theory), Neuromuscular junction

#### Unit 3: Respiratory Physiology

14

Ventilation, External and internal Respiration, Transport of oxygen and carbon dioxide in blood, Factors affecting transport of gases.

#### Unit 4: Cardiovascular Physiology

10

Structure of heart, Coordination of heartbeat, Cardiac cycle, ECG

#### Unit 5: Endocrine and Reproductive Physiology

14

Structure and function of endocrine glands (pituitary, thyroid, parathyroid, pancreas, adrenal, ovaries, and testes), Brief account of spermatogenesis and oogenesis, Menstrual cycle

### PRACTICAL

(CREDITS 2)

1. Preparation of temporary mounts: Neurons and Blood film.
2. Preparation of haemin and haemochromogen crystals.
3. Estimation of haemoglobin using Sahli's haemoglobinometer.
4. Examination of permanent histological sections of mammalian oesophagus, stomach, duodenum, rectum, lung, kidney, thyroid, pancreas, adrenal, testis, ovary.

### SUGGESTED READINGS

- Tortora, G.J. and Derrickson, B.H. (2009). *Principles of Anatomy and Physiology*, XII Edition, John Wiley and Sons, Inc.
- Widmaier, E.P., Raff, H. and Strang, K.T. (2008). *Vander's Human Physiology*, XI Edition, McGraw Hill.
- Guyton, A.C. and Hall, J.E. (2011). *Textbook of Medical Physiology*, XII Edition, Harcourt Asia Pvt. Ltd/ W.B. Saunders Company.
- Marieb, E. (1998). *Human Anatomy and Physiology*, IV Edition, Addison-Wesley.
- Kesar, S. and Vashisht, N. (2007). *Experimental Physiology*, Heritage Publishers.
- Prakash, G. (2012). *Lab Manual on Blood Analysis and Medical Diagnostics*, S. Chand and Company Ltd.

## SKILL ENHANCEMENT COURSES

### ZOS 3.4 APICULTURE (CREDITS 2)

**Unit 1: Biology of Bees (4)** History, Classification and Biology of Honey Bees  
Social Organization of Bee Colony

**Unit 2: Rearing of Bees(10)**Artificial Bee rearing (Apiary), Beehives – Newton and Langstroth  
Bee Pasturage  
Selection of Bee Species for Apiculture  
Bee Keeping Equipment  
Methods of Extraction of Honey (Indigenous and Modern)

**Unit 3: Diseases and Enemies(5)**Bee Diseases and Enemies  
Control and Preventive measures

**Unit 4: Bee Economy(2)**Products of Apiculture Industry and its Uses (Honey, Bees Wax, Propolis),  
Pollen  
Etc

**Unit 5: Entrepreneurship in Apiculture(4)**Bee Keeping Industry – Recent Efforts, Modern Methods in  
employing artificial  
Beehives for cross pollination in horticultural gardens

#### SUGGESTED READINGS

- Prost, P. J. (1962). *Apiculture*. Oxford and IBH, New Delhi.
- Bisht D.S., *Apiculture*, ICAR Publication.
- Singh S., *Beekeeping in India*, Indian council of Agricultural Research, New Delhi.

### ZOS 4.4: AQUARIUM FISH KEEPING (CREDITS 2)

#### **Unit1: Introduction to Aquarium Fish Keeping**

The potential scope of Aquarium Fish Industry as a Cottage Industry, Exotic and Endemic species of Aquarium Fishes

#### **Unit 2: Biology of Aquarium Fishes**

Common characters and sexual dimorphism of Fresh water and Marine Aquarium fishes such as Guppy, Gold fish, Angel fish, Anemone fish and Butterfly fish

#### **Unit 3: Food and feeding of Aquarium fishes**

Use of live fish feed organisms. Preparation and composition of formulated fish feeds

#### **Unit 4: Fish Transportation**

Live fish transport - Fish handling, packing and forwarding techniques.

#### **Unit 5: Maintenance of Aquarium**

General Aquarium maintenance – budget for setting up an Aquarium Fish Farm as a Cottage Industry



## BACHELOR OF BUSINESS ADMINISTRATION CHOICE-BASED CREDIT SYSTEM: HONOURS

Semester	Core Course (C)	Ability Enhancement Course (A)	Skilled Enhancement Course (S)	Discipline Specific Elective (D)	Generic Elective (G)
First	BAC 1.1 Fundamentals of Management & Organisational Behaviour	BAA 1.3 Business Communication			BAG 1.4 India's Diversity & Business
	BAC 1.2 Business Accounting				
Second	BAC 2.1 Managerial Economics	BAA 2.3 Environmental Studies			BAG 2.4 Ethics & Corporate Social Responsibility
	BAC 2.2 Statistics for Business Decisions				
Third	BAC 3.1 Business Environment		BAS 3.4 IT Tools for Business		BAG 3.5 Entrepreneurship Development
	BAC 3.2 Principles of Marketing				
	BAC 3.3 Management Accounting				
Fourth	BAC 4.1 Business Research				BAG 4.4 Production & Operation Management
	BAC 4.2 Human Resource Management				
	BAC 4.3 Financial Management				
Fifth	BAC 5.1 Quantitative Techniques for Management			BAD 5.3 Distribution & Supply Chain Management	
	BAC 5.2 Legal Aspects of Business			BAD 5.4 Marketing of Services	
Sixth	BAC 6.1 Strategic Management		BAS 6.3 Summer Internship	BAD 6.4 Advertising & Brand Management	
	BAC 6.2 Financial Institutions & Markets			BAD 6.5 Retail Management	
Credit Points	14*6=84 C.P	2*2=4 C.P	2*2=4 C.P	4*6=24 C.P	4*6=24 C.P
<b>***Total Credit Points= 140 C.P</b>					

## BACHELOR IN BUSINESS ADMINISTRATION

PAPER CODE		
<b>SEMESTER I</b>		
BAC 1.1	Fundamentals of Management & Organisational Behaviour	Core Discipline
BAC 1.2	Business Accounting	Core Discipline
BAA 1.3	Business Communication	Ability Enhancement - Compulsory
BAG 1.4	India's Diversity & Business	Elective Course- Generic/Interdisciplinary
<b>SEMESTER II</b>		
BAC 2.1	Managerial Economics	Core Discipline
BAC 2.2	Statistics for Business Decisions	Core Discipline
BAA 2.3	Environmental Science	Ability Enhancement - Compulsory
BAG 2.4	Ethics & Corporate Social Responsibility	Elective Course- Generic/Interdisciplinary
<b>SEMESTER III</b>		
BAC 3.1	Business Environment	Core Discipline
BAC 3.2	Principles of Marketing	Core Discipline
BAC 3.3	Management Accounting	Core Discipline
BAS 3.4	IT Tools for Business	Skill Enhancement Course
BAG 3.5	Entrepreneurship Development	Elective Course- Generic/Interdisciplinary
<b>SEMESTER IV</b>		
BAC 4.1	Business Research	Core Discipline
BAC 4.2	Human Resource Management	Core Discipline
BAC 4.3	Financial Management	Core Discipline
BAG 4.4	Production and Operation Management	Elective Course- Generic/Interdisciplinary
<b>SEMESTER V</b>		
BAC 5.1	Quantitative Techniques for Management	Core Discipline
BAC 5.2	Legal Aspects of Business	Core Discipline
BAC 5.3	Distribution and Supply Chain Management	Discipline Specific Elective
BAC 5.4	Marketing of Services	Discipline Specific Elective
<b>SEMESTER VI</b>		
BAC 6.1	Strategic Management	Core Discipline
BAC 6.2	Financial Institutions & Markets	Core Discipline
BAS 6.3	Summer Internship	Skill Enhancement Course
BAD 6.4	Advertising & Brand Management	Discipline Specific Elective
BAD 6.5	Retail Management	Discipline Specific Elective

## First Semester

### 1. Core Discipline Paper: Fundamentals of Management & Organisational Behaviour

Paper Code: BAC 1.1

Credit Points: 6

**Objective:** To acquaint the students with the fundamentals of managing business and to understand individual and group behavior at work place so as to improve the effectiveness of an organization. The course will use and focus on Indian experiences, approaches and cases

#### Course contents:

**Unit I:** Basic forms of Business Ownership; Special forms of ownership: Franchising, Licensing, Leasing; Choosing a form of Business ownership; Corporate Expansion: mergers and acquisitions, diversification, forward and backward integration, joint ventures, Strategic alliance. Evolution of Management Theory. Managerial functions and Roles. Insights from Indian practices and ethos.

**Unit II:** Overview of Planning: Types of Plans & The planning process; Decision making: Process, Types and Techniques. Control: Function, Process and types of Control; Principles of organizing: Common organisational structures; Delegation & Decentralization: Factors affecting the extent of decentralization, Process and Principles of delegation.

**Unit III:** Importance of organizational Behaviour. Perception and Attribution: Concept, Nature, Process, Personality: Personality: Learning: Concept and Theories of Learning, reinforcement, . Motivation: Concepts and their application, Need, Content & Process theories, Contemporary Leadership issues: Charismatic, Transformational Leadership. Emotional Intelligence

**Unit IV:** Groups and Teams: Definition, Difference between Groups and teams; Stages of Group Development, Group Cohesiveness, Types of teams. Analysis of Interpersonal Relationship: Transactional Analysis, Johari Window Organisational Power and Politics: Nature of organisational politics. Conflict: Concept, Sources, Types, Stages of conflict, Management of conflict, Organisational Change: Concept, Resistance to change, Managing resistance to change, Implementing Change, Kurt Lewin Theory of Change. Managing Stress: Insights from Indian ethos

#### Suggested Readings:

1. Gilbert: *Principles of Management*, McGraw Hill.
2. Greenberg Jerald and Baron Robert A.: *Behaviour in Organisations: Understanding and Managing The Human Side of Work*, Prentice Hall of India.
3. Kaul Vijay Kumar, *Business Organisation & Management - Text and Cases*, Pearson.
4. Kaul, Vijay Kumar, *Management- Text & Cases*, Vikas Publication.
5. Kavita Singh: *Organisational Behaviour*, Vikas Publication.
6. Koontz & Heinz Wehrich: *Essential of Management*, McGraw Hill.
7. Luthans Fred: *Organisational Behaviour*, Tata McGraw Hill.
8. Mc Shane L. Steven, Glinow Mary Ann Von & Sharma Radha R. - *Organisational Behaviour*; Tata McGraw Hill.
9. Newstrom John W.: *Organisational Behaviour*, Tata McGraw Hill.
10. Richard L. Daft: *Principles of Management*, Cengage Learning India.
11. Robbins Stephen P: *Organisational Behaviour*, Pearson.
12. Stephen P. Robbins & Mary Coulter: *Management*, Pearson.
13. Stoner & Wankel: *Management*, Prentice Hall of India.
14. Y.K. Bhushan: *Fundamentals of Business Organisation & Management*, Sultan Chand & Sons.
15. Navin Mathur, *Management Gurus*, National Publishing House, New Delhi

## 2. Core Discipline Paper: **BUSINESS ACCOUNTING**

**Paper Code: BAC 1.2**

**Credit Point: 6**

**Objective:** *To familiarize students with the mechanics of preparation of financial statements, understanding corporate financial statements, their analysis and interpretation.*

### **Course Contents**

**Unit I:** Introduction to Financial Accounting. Accounting as an Information System. Importance, Scope, and Limitations. Users of Accounting Information. Generally Accepted Accounting Principles. The Accounting Equation. Nature of Accounts and Rules of Debit and Credit. Recording Transactions in General Journal. Recording Transactions in three column Cash Book. An overview of Subsidiary books – Purchase Book, Purchase Returns Book, Sales Book, and Sales Returns Book. Opening and Closing Entries. Preparation of Ledger Accounts.

**Unit II:** Introduction to International Financial Reporting Standards (IFRS). Understanding Accounting Standards issued by the ICAI related to Disclosure of Accounting Policies, Depreciation Accounting, and Revenue Recognition. Methods of charging Depreciation – Straight-line Method, and Written-down-value Method. Preparation of Trial Balance. Adjustment Entries. Post-adjusted Trial Balance. Bank Reconciliation Statement.

**Unit III:** Preparation of Financial Statements: Preparing Trading Account, Profit & Loss Account and Balance Sheet for a Sole Proprietor. Understanding contents of Financial Statements of a Joint Stock Company as per Companies Act 2013. Understanding the contents of a Corporate Annual Report. Preparation of Cash Flow Statement as per AS-3 (revised).

**Unit IV:** Analyzing Financial Statements: Objectives of Financial Statement Analysis; Sources of Information; Standards of Comparison; Techniques of Financial Statement Analysis - Horizontal Analysis, Vertical Analysis, and Ratio Analysis. Meaning and Usefulness of Financial Ratios; Analysis of Financial Ratios from the perspective of different Stakeholders like Investors, Lenders, and Short-term Creditors; Profitability Ratios, Solvency Ratios, Liquidity Ratios, and Turnover Ratios; Limitations of Ratio Analysis.

### **Suggested Readings:**

1. *S.N. Maheshwari, Suneel K. Maheshwari, and Sharad K. Maheshwari: An Introduction to Accountancy, Vikas Publishing House Pvt. Ltd.*
2. *R. Narayanaswamy, Financial Accounting: A Managerial Perspective, PHI Learning Pvt. Ltd.*
3. *Charles T. Horngren, Gart L. Sundem, John A. Elliott, and Donna R. Philbrick, Introduction to Financial Accounting, Pearson.*
4. *J.R. Monga, Financial Accounting: Concepts and Applications, Mayur Paperbacks.*
5. *T.P. Ghosh, Financial Accounting for Managers: Taxmann Allied Services Pvt. Ltd.*

### 3. Ability Enhancement Paper: BUSINESS COMMUNICATION

Paper Code: BAA 1.3

Credit Points: 2

**Objective:** *The objective of the course is to bring about personality development with regard to the different behavioural dimensions that have far reaching significance in the direction of organisational effectiveness.*

**Unit 1:** Basic form of Communication - Downward, upward and horizontal communication, Process of communication. Corporate Communication - Formal and informal communication network, Grapevine - single strand, gossip, cluster, Probability, Importance of Grapevine, Miscommunication or Barrier to communication - Wrong choice of medium, Physics barriers, Semantic barriers, different Comprehension of reality, Socio psychological barriers. Principles of Communication - 7c's concept

**Unit 2:** Planning business messages, Business letters, Memo formats, Request letters, Good news and Bad news letters. Persuasive letters - AIDA, Sales letters, collection letters Detailed Project Report Writing and presentation

**Unit 3:** Principles of oral presentations, Factors effecting presentations Non - Verbal communication - Appearance, Body language, Para language, Time, Space, Silence. Effective Listening - factors affecting listening, Improving listening

**Unit 4:** Interviewing Skills - Interviewer's preparation, Interviewee's preparation, Types of interview Communication for Employment - Resume: Formulating Career Plans, Planning your Resume, Structuring the Resume, Content of the Resume, Electronic Resumes

**Unit 5:** Cultural sensitiveness, Cultural context Negotiation Skills - Process, Strategies, Issue in Negotiation - Collective bargaining, Process & Essentials of effective BC.

#### ***Suggested Readings:***

1. *Sutapa Banerjee, Business and Professional Communication, I K International Publishing House Pvt. Ltd.*
2. *Pooja Khanna, Business Communication, Vikas Publishing House Pvt. Ltd.*
3. *Sri Jin Kushal, Business Communication, VK Global Publications Pvt. Ltd.*

#### 4. Elective Course- Generic Paper: INDIA'S DIVERSITY AND BUSINESS

**Paper Code: BAG 1.4**

**Credit Point: 6**

**Objective:** *The objective of the paper is to understand the bases of India's diversity and its linkages with the people, livelihood, occupational diversity and socio-economic challenges. Further, it aims at understanding the diversity and its implications for the business.*

**Unit 1:** Recognizing, Accommodating and valuing diversity Challenges and dilemmas posed by diversity and drive for homogenization; Sources of dilemma and tension—immigration, competition for limited resources; Regional bases of India's diversity: regional approach to understanding diversity in terms of India's topography, drainage, soil, climate, natural vegetation, rural and urban settlements Social diversity in India: Peopling , demography, languages, castes, ethnicity, religions, sects, family, kinship and social institutions; socio-cultural regions.

**Unit 2:** People, Livelihood and Occupational Diversity , Traditional livelihoods and their nature - agriculture, crafts, industry and services; Region, occupation and employment

**Unit 3:** Linkages between Diversity and India's Socio-economic challenges,Regional variations in terms of geographic and socio-economic factors- trends and emerging options; Food insecurity, economic inequalities and poverty, environmental degradation and sustainable development.

**Unit 4:** Diversity and Business, Indian Consumers and marketing; Rural and Urban context, Diversity, manufacturing, industry and services; Diversity and Innovation; Workforce diversity and management

#### **Suggested Readings:**

1. *Bhatt, B. L(1980)-“ India and Indian Regions: A Critical Overview” in David E. Sopher 'An Exploration of India- Geographical Perspectives on Society and Culture'. Cornell. Pages- 35-61 for Socio cultural regions.*
2. *Bill Aitken, Seven sacred rivers, Penguin Books, 1992*
3. *Bose NK (1969) Unity in Indian Diversity in Desai AR (1969) Rural Sociology in India, reprinted 2009, Popular Prakashan, (for diversity as strength Part II chap 3 pp 134-136)*
4. *Chakravarti AK (2004) Regional Preferences for Food: Some Aspects of Food Habit Patterns In India in Grover N and KN Singh (eds) 2004, Cultural Geography: Form and Process , Concept Publishers, Delhi (for regional specificity of food -Chap 23 pp 355 to 375)*
5. *Fernando Mart´ in-Alca´zar Pedro M. Romero-Fernandez Gonzalo Sanchez Gardey, Transforming Human Resource Management Systems to Cope with Di versity, Journal of Business Ethics, 2012, 107:511-531*
6. *Gadgil and Guha Ecology and Equity: The use and abuse of nature in contemporary India. Penguin 1995*
7. *Gail Robinson and Kathleen Dechant, Building a business case for diversity, Academy of Management Executive 1997, Vol 11, No. 3*

## SECOND SEMESTER

### 1. Core Course Paper: **MANAGERIAL ECONOMICS**

**Paper Code: BAC 2.1**

**Credit Points: 6**

**Objective:** *The purpose of this course is to apply micro economic concepts and techniques in evaluating business decisions taken by firms. The emphasis is on explaining how tools of standard price theory can be employed to formulate a decision problem, evaluate alternative courses of action and finally choose among alternatives. Simple geometry and basic concepts of mathematics will be used in the course of teaching.*

#### **Course content**

**Unit I:** Demand, Supply and Market equilibrium: individual demand, market demand, Individual supply, market supply, market equilibrium; Elasticities of demand and supply: Price elasticity of demand, income elasticity of demand, cross price elasticity of demand, Elasticity of supply; Theory of consumer behaviour: cardinal utility theory, ordinal utility theory(indifference curves, budget line, consumer choice, price effect, substitution effect, income effect for normal, inferior and giffen goods), revealed preference theory.

**Unit II:** Producer and optimal production choice: optimizing behavior in short run( geometry of product curves, law of diminishing margin productivity, three stages of production), optimizing behavior in long run (isoquants, isocost line, optimal combination of resources) Costs and scale: traditional theory of cost (short run and long run, geometry of cot curves, envelope curves), modern theory of cost (short run and long run), economies of scale, economies of scope.

**Unit III:** Theory of firm and market organization: perfect competition (basic features, Short run equilibrium of firm/industry, long run equilibrium of firm/industry, effect of Changes in demand, cost and imposition of taxes); monopoly (basic features, short run Equilibrium, long run equilibrium, effect of changes in demand, cost and imposition of Taxes, comparison with perfect competition, welfare cost of monopoly), price discrimination, multiplant monopoly ; monopolistic competition (basic features, demand and cost, short run equilibrium, long run equilibrium, excess capacity) ; oligopoly (Cournot's model, kinked demand curve model, dominant price leadership model, prisoner's dilemma)

**Unit IV:** Factor market: demand for a factor by a firm under marginal productivity theory (perfect competition in the product market, monopoly in the product market), market demand for a factor, supply of labour, market supply of labour, factor market equilibrium.

**Unit V:** Factors of Production, Production Function, Laws of Returns- Law of Variable Proportions and Laws of Returns to Scale, Economics of large scale and small scale production

#### **Suggested Readings:**

1. *Dominick Salvatore (2009). Principles of Microeconomics (5<sup>th</sup>ed.) Oxford University Press*
2. *Lipsey and Chrystal. (2008). Economics. ( 11<sup>th</sup>ed.) Oxford University Press*
3. *Koutosyannis (1979). Modern Micro Economics. Palgrave Macmillan*
4. *Pindyck, Rubinfeld and Mehta. (2009). Micro Economics. (7<sup>th</sup>ed. ). Pearson.*

## 2. Core Course Paper:

## STATISTICS FOR BUSINESS DECISIONS

**Paper Code: BAC 2.2**

**Credit Points: 6**

**Objective:** To familiarize the students with various Statistical Data Analysis tools that can be used for effective decision making. Emphasis will be on the application of the concepts learnt.

### **Course contents:**

**Unit I:** Measures of Central Value: Characteristics of an ideal measure; Measures of Central Tendency - mean, median, mode, harmonic mean and geometric mean. Merits, Limitations and Suitability of averages. Relationship between averages. Measures of Dispersion: Meaning and Significance. Absolute and Relative measures of dispersion - Range, Quartile Deviation, Mean Deviation, Standard Deviation, Coefficient of Variation, Moments, Skewness, Kurtosis.

**Unit II:** Correlation Analysis: Meaning and significance. Correlation and Causation, Types of correlation. Methods of studying simple correlation - Scatter diagram, Karl Pearson's coefficient of correlation, Spearman's Rank correlation coefficient, Regression Analysis: Meaning and significance, Regression vs. Correlation. Linear Regression, Regression lines (X on Y, Y on X) and Standard error of estimate.

**Unit III:** Analysis of Time Series: Meaning and significance. Utility, Components of time series, Models (Additive and Multiplicative), Measurement of trend: Method of least squares, Parabolic trend and logarithmic trend; Index Numbers: Meaning and significance, problems in construction of index numbers, methods of constructing index numbers-weighted and unweighted, Test of adequacy of index numbers, chain index numbers, base shifting, splicing and deflating index number.

**Unit IV:** Probability: Meaning and need. Theorems of addition and multiplication. Conditional probability. Bayes' theorem, Random Variable- discrete and continuous. Probability Distribution: Meaning, characteristics (Expectation and variance) of Binomial, Poisson, and Normal distribution. Central limit theorem.

**Unit V:** Hypothesis testing: Concept; Level of Significance; Process of testing; Test of hypothesis concerning Mean; Test of hypothesis Normal Z test & t test for single mean. Using Non-parametric statistics for hypothesis testing.

### **Suggested Readings:**

1. *S.P. Gupta (S.P.): Statistical Methods, Sultan Chand & Sons, 34th Edition.*
2. *Richard Levin & David Rubin : Statistics for management, Prentice Hall.*
3. *Anderson, Sweeny & Williams: Statistics for Business and Economics, South Western.*



**3. Ability Enhancement Paper: ENVIRONMENTAL STUDIES** (Syllabus to be given by the concerned department)

**Paper Code: BAA 2.3**

**Credit Points: 2**

**4. Elective Course- Generic Paper: ETHICS AND CORPORATE SOCIAL RESPONSIBILITY**

**Paper Code: BAG 2.4**

**Credit Points: 6**

**Objective:** *The objective of this paper is to make the students more clear about the importance of ethics in business and practices of good corporate governance. It also talks about the corporate social responsibility.*

**Course contents:**

**Unit I:** Business ethics: Meaning of ethics, why ethical problems occur in business. Ethical principles in business: Utilitarianism: weighing social cost and benefits, Rights and duties, Justice and fairness, ethics of care, Integrating utility, rights, justice and caring, An alternative to moral principles: virtue ethics, Moral issues in business: Worker's and employee's rights and responsibilities, Profit maximization vs. social responsibility.

**Unit II:** Corporate governance: concept, Need to improve corporate governance standards, Features of good governance, Role played by regulators to improve corporate governance, accounting standards and corporate governance, corporate disclosure, insider trading. The Board –Quality, Composition and role of Board, Outside Directors on the board (independent, nominee), Executive and Non-Executive directors, SEBI clause 49, directors and financial institutions in enhancing corporate governance, critical issues in governance of board directors, CEO Duality.

**Unit III:** Role of auditors in enhancing corporate governance, duties and responsibilities of auditors, corporate governance and internal auditors, Whistle blowing: Kinds of whistle blowing, precluding the need for whistle blowing. Discrimination, affirmative action, and reverse discrimination: Equal employment opportunity, Affirmative action, Preferential hiring, Corporate social responsibility: Meaning, Evolution of corporate social responsibility, common indicators for measuring business social performance, reporting social responsibility measures in annual report.

***Suggested Readings:***

1. Manuel G Velasquez : Business ethics- concepts and cases Pearson.
2. Luthans Hodgetts and Thompson: Social issues in business, Macmillan USA
3. A.C. Fernando: Business Ethics Pearson Education.
4. A.C. Fernando: Corporate Governance Pearson Education.
5. Adrian Davies: Strategic approach to corporate governance Gower Pub Co.
6. N. Gopalswamy: Corporate governance a new paradigm A H Wheeler Publishing Co Ltd.
7. Marianne M Jennings: Cases in Business Ethics Indian South-Western College Publishing
8. Kevin Gibson: Ethics and Business, An Introduction, Cambridge Applied Ethics Cambridge University Press
9. Bhanumurthy K V: Ethics and Social Responsibility of Business, Pearson Education India.

## THIRD SEMESTER

**1. Core Course Paper:**  
**Paper Code: BAC 3.1**

**BUSINESS ENVIRONMENT**  
**Credit Points: 6**

**Objective:** The basic objective of this course is to familiarize the students with the nature and dimensions of evolving business environment in India to influence managerial decisions.

### **Unit I: An Overview of Business Environment**

Type of Environment-internal, external, micro and macro environment. Competitive structure of industries, environmental analysis and strategic management. Managing diversity. Scope of business, characteristics of business. Objectives and the uses of study. Process and limitations of environmental analysis.

### **Unit II: Economic Environment**

Nature of Economic Environment. Economic factors-growth strategy, basic economic system, economic planning, Economic policies- new industrial policy, FEMA, Monetary and fiscal policies. Consumer Protection Act and Competition Law. Liberalization, Privatization and Globalization of Indian Economy, Trends and Issues.

### **Unit III: Socio-Cultural Environment**

Nature and impact of culture on business, culture and globalization, social responsibilities of business, social audit, business ethics and corporate governance, Demographic environment population size, migration and ethnic aspects, birth rate, death rate and age structure

### **Unit IV: Political Environment**

Functions of state, economic roles of government, government and legal environment. The constitutional environment, rationale and extent of state intervention.

### **Unit V: Natural and Technological Environment**

Innovation, technological leadership and followership, sources of technological dynamics, impact of technology on globalization, transfer of technology, time lags in technology introduction, Status of technology in India; Management of technology; Features and Impact of technology.

### ***Suggested Readings:***

1. Rangarajan, C.A.; *Perspective in Economics*, S.Chand & Sons, New Delhi
2. Cherunilam, Francis; *Business Environment - Text and Cases*, Himalaya Publishing House.
3. Aswathappa, K.; *Essentials of Business Environment*, Himalaya Publishing House, New Delhi.

**Objective:** This course aims to familiarize students with the marketing function in organizations. It will equip the students with understanding of the Marketing Mix elements and sensitize them to certain emerging issues in Marketing. The course will use and focus on Indian experiences, approaches and cases

**Course Content:**

**Unit I:** Introduction: Nature, Scope and Importance of Marketing, Evolution of Marketing; Core marketing concepts; Company orientation - Production concept, Product concept, Selling concept, Marketing concept, Holistic marketing concept. Marketing Environment: Demographic, economic, political, legal, socio cultural, technological environment (Indian context); Portfolio approach – Boston Consultative Group (BCG) matrix

**Unit II:** Segmentation, Targeting and Positioning: Levels of Market Segmentation, Basis for Segmenting Consumer Markets, Difference between Segmentation, Targeting and Positioning;

**Unit III:** Product & Pricing Decisions: Concept of Product Life Cycle (PLC), PLC marketing strategies, Product Classification, Product Line Decision, Product Mix Decision, Branding Decisions, Packaging & Labelling, New Product Development. Pricing Decisions: Determinants of Price, Pricing Methods (Non-mathematical treatment), Adapting Price (Geographical Pricing, Promotional Pricing and Differential Pricing).

**Unit IV:** Promotion Mix: Factors determining promotion mix, Promotional Tools – basics of Advertisement, Sales Promotion, Public Relations & Publicity and Personal Selling; Place (Marketing Channels): Channel functions, Channel Levels, Types of Intermediaries: Types of Retailers, Types of Wholesalers. Marketing of Services - Unique Characteristics of Services, Marketing strategies for service firms – 7Ps.

**Unit V:** Recent Trends in Marketing: Introduction, E-commerce, E-marketing, E-Retailing, Relationship marketing, Mobile marketing, Green marketing

**Suggested Readings:**

1. Kotler, P. & Keller, K. L.: *Marketing Management*, Pearson.
2. Kotler, P., Armstrong, G., Agnihotri, P. Y., & UlHaq, E.: *Principles of Marketing: A South Asian Perspective*, Pearson.
3. Ramaswamy, V.S. & Namakumari, S.: *Marketing Management: Global Perspective-Indian Context*, Macmillan Publishers India Limited.
4. Zikmund, W.G. & D'Amico, M.: *Marketing, Ohio: South-Western College Publishing*.

**3. Core Course:**  
**Paper Code: BAC 3.3**

**MANAGEMENT ACCOUNTING**  
**Credit Points: 6**

**Objective:** *To acquaint students with role of Management Accounting in planning, control and decision-making.*

**Course Content**

**Unit I:** Nature, Scope of Management Accounting: Meaning, definition, nature and scope of Management Accounting; Comparison of Management Accounting with Cost Accounting and Financial Accounting. Cost concepts: Meaning, Scope, Objectives, and Importance of Cost Accounting; Cost, Costing, Cost Control, and Cost Reduction; Elements of Cost, Components of total Cost, Cost Sheet. Classification of Costs: Fixed, Variable, Semivariable, and Step Costs; Product, and Period Costs; Direct, and Indirect Costs; Relevant, and Irrelevant Costs; Shut-down, and Sunk Costs; Controllable, and Uncontrollable Costs; Avoidable, and Unavoidable Costs; Imputed / Hypothetical Costs; Out-of-pocket Costs; Opportunity Costs; Expired, and Unexpired Costs; Conversion Cost. Cost Ascertainment: Cost Unit and Cost Center. Introduction to Overhead allocation, Overhead apportionment, and Overhead absorption.

**Unit II:** Cost-Volume-Profit Analysis: Contribution, Profit-Volume Ratio, Margin of safety, Cost Break-even Point, Composite Break-even Point, Cash Break-even Point, Key Factor, Break-even Analysis. Relevant Costs and Decision Making: Pricing, Product Profitability, Make or Buy, Exploring new markets, Export Order, Sell or Process Further, Shut down vs. Continue.

**Unit III:** Budgets and Budgetary Control: Meaning, Types of Budgets, Steps in Budgetary Control, Fixed and Flexible Budgeting, Cash Budget. Responsibility Accounting: Concept, Significance, Different responsibility centers, Divisional performance – Financial measures, Transfer pricing.

**Unit IV:** Standard Costing and Variance Analysis: Meaning of Standard Cost and Standard Costing, Advantages, Limitations and Applications; Material, Labor, Overhead and Sales variances. Introduction to Target Costing, Life Cycle Costing, Quality Costing, and Activity based Costing.

**Suggested Readings:**

1. *C.T. Horngren, Gary L. Sundem, Jeff O. Schatzberg, and Dave Burgstahler: Introduction to Management Accounting, Pearson*
2. *M.N. Arora: A Textbook of Cost and Management Accounting, Vikas Publishing House Pvt. Ltd.* 3. *M.Y. Khan, and P.K. Jain, Management Accounting: Text Problems and Cases, McGraw Hill Education (India) Pvt. Ltd.*
4. *S.N. Maheshwari, and S.N. Mittal, Cost Accounting: Theory and Problems, Shree Mahavir Book Depot (Publishers)*

***Objectives:** To acquaint students with role of IT Tools in Business and to learn the skills related to computer in Business Field.*

**Course Content:**

**UNIT-I: Spreadsheets Introduction:** Concept of worksheets and workbooks, creating, opening, closing and saving workbooks, moving, copying, inserting, deleting and renaming worksheets, working with multiple worksheets and multiple workbooks, controlling worksheet views, naming cells using name box, name create and name define. Using formulae and functions: Understanding absolute, relative and mixed referencing in formulas, referencing cells in other worksheets and workbooks, correcting common formula errors, working with inbuilt function categories like mathematical, statistical, text, lookup, information, logical, database, date and time and basic financial functions. Consolidating worksheets and workbooks using formulae and data consolidate command Printing and Protecting worksheets: Adjusting margins, creating headers and footers, setting page breaks, changing orientation, creating portable documents and printing data and formulae. Implementing file level security and protecting data within the worksheet Creating charts and graphics: Choosing a chart type, understanding data points and data series, editing and formatting chart elements, and creating sparkline graphics. Analysing data using pivot tables: Creating, formatting and modifying a pivot table, sorting, filtering and grouping items, creating calculated field and calculated item, creating pivot table charts, producing a report with pivot tables. Performing what-if analysis: Types of what if analysis (manual, data tables, scenario manager), what-if analysis in reverse (goal-seek, solver) Exchanging data using clipboard, object linking and embedding.

**UNIT- II: Word processing Introduction:** Creating and saving your document, displaying different views, working with styles and character formatting, working with paragraph formatting techniques using indents, tabs, alignment, spacing, bullets and numbering and creating borders. Page setup and sections: Setting page margins, orientation, headers and footers, end notes and foot notes, creating section breaks and page borders. Working with tables: Creating tables, modifying table layout and design, sorting, inserting graphics in a table, table math, converting text to table and vice versa. Create newspaper columns, indexes and table of contents. Spellcheck your document using inbuilt and custom dictionaries, checking grammar and style ,using thesaurus and finding and replacing text. Create bookmarks, captions and cross referencing, adding hyperlinks, adding sources and compiling and bibliography Mail merge: Creating and editing your main document and data source, sorting and filtering merged documents and using merge instructions like ask, fill-in and if-then-else. Linking and embedding to keep things together.

**UNIT-III: Powerpoint presentation Introduction:** Creating a blank presentation using a design template, basing a new presentation on an existing one, creating and managing slides, using content place holders, creating graphs, tables, diagrams, organization charts, inserting clip art and images. Viewing and navigating a presentation: Organising ideas in outline view, using slide sorter to rearrange a presentation, previewing presentation in slide show, understanding master views, using title master, slide master, handout master and notes master, working with headers and footers, using hyperlinks, advanced navigation with action settings, navigation short hand with action buttons Animation and multimedia: Using and applying animation schemes, custom animation, understanding sound file formats and video types, adding music, sound and video clips. Final presentation: Applying transition to slides, controlling transition speed, using hidden slides, using custom shows, using on screen pen and adding and accessing notes during a presentation.

**UNIT-IV:** Databases Introduction to Database Development: Database Terminology, Objects, Creating Tables, working with fields, understanding Data types , Changing table design, Assigning Field Properties, Setting Primary Keys, using field validation and record validation rules, Indexing, working with multiple tables, Relationships & Integrity Rules, Join Properties, Record manipulation, Sorting & Filtering. Select data with queries: Creating Query by design & by wizard (Select, Make Table, Append, Delete, Cross Tab, Update, Parameterized Query, Find Duplicate and Find Unmatched), Creating multi table queries, creating & working with table joins. Using operators & expressions: Creating simple & advance criteria. Working with forms: Creating Basic forms, working with bound, unbound and calculated controls, understanding property sheet, Working with Data on Forms: Changing Layout, creating Sub Forms, creating list box, combo box and option groups. Working with Reports: Creating Basic Reports, Creating Header & Footer, Placing Controls on reports, sorting & grouping, Creating Sub reports.

***Suggested Readings:***

1. *LMPrasad, Usha Prasad- Management information Systems, Sultan Chand & Sons*
2. *Mardic & Ross- Information system for modern management, Prentice Hall*
3. *Rajaraman V- Fundamentals of Computers, PHI*
4. *Bharihoke Deepak – Fundamentals of Information Technology, Excel Books*
5. *Saxena S, Computer Applications in Management, Vikas Publication*
6. *Introduction to Information Technology – ITL Education Solutions Ltd., Pearson*
7. *Siler Ban, Spotts Jeff – Special Edition using Visual Basic 6, PHI*

**5. Elective Course- Generic Paper: ENTREPRENEURSHIP DEVELOPMENT**  
**Paper Code: BAG 3.5** **Credit Points: 6**

**Objective:** This course provides students with a solid introduction to the entrepreneurial process of creating new businesses, role of Creativity and innovation in Entrepreneurial start-ups, manage family-owned companies, context of social innovation and social entrepreneurship and issues and practices of financing entrepreneurial businesses.

**UNIT-1 ENTREPRENEURIAL MANAGEMENT**

The evolution of the concept of entrepreneurship, John Kao's Model on Entrepreneurship, Idea Generation, Identifying opportunities and Evaluation; Building the Team / Leadership; Strategic planning for business; Steps in strategic planning, Forms of ownership – Sole proprietorship; partnership; limited liability partnership and corporation form of ownership; advantages/disadvantages, Franchising; advantages/disadvantages of franchising; types of franchise arrangements; franchise contracts; franchise evaluation checklist, Financing entrepreneurial ventures; Managing growth; Valuation of a new company; Harvesting and Exit Strategies; Corporate Entrepreneurship

**UNIT-2 ENTREPRENEURSHIP, CREATIVITY AND INNOVATION**

Stimulating Creativity; Organisational actions that enhance/hinder creativity, Managerial responsibilities, Creative Teams; Sources of Innovation in Business; Managing Organizations for Innovation and Positive Creativity.

**UNIT-3 SOCIAL ENTREPRENEURSHIP**

Introduction to Social Entrepreneurship; Characteristics and Role of Social Entrepreneurs; Innovation and Entrepreneurship in a Social Context; Start-Up and Early Stage Venture Issues in creating and Sustaining a Non-profits Organization; Financing and Risks; Business Strategies and Scaling up.

**UNIT-4 FAMILY BUSINESS AND ENTREPRENEURSHIP**

The Entrepreneur; Role and personality; Family Business: Concept, structure and kinds of family firms ; Culture and evolution of family firm; Managing Business, family and shareholder relationships ; Conflict and conflict resolution in family firms ; Managing Leadership , succession and continuity ; women's issues in the family business ; Encouraging change in the family business system.

**UNIT-5 FINANCING THE ENTREPRENEURIAL BUSINESS**

Arrangement of funds; Traditional sources of financing, Loan syndication, Consortium finance, role played by commercial banks, appraisal of loan applications by financial institutions, Venture capital.

**Suggested Readings**

1. Burns, P. (2001). *Entrepreneurship and small business*. New Jersey: Palgrave.
2. Drucker, P. F. (2006). *Innovation and entrepreneurship: Practice and principles*. USA: Elsevier.
3. Gersick, K. E., Davis, J. A., Hampton, M. M., & Lansberg, I. (1997). *Generation to generation: Life cycles of the family business*. Boston: Harvard Business School Press.
4. Hisrich, R., & Peters, M. (2002). *Entrepreneurship*. New Delhi: Tata McGraw Hill.
5. Holt, D. H. (2004). *Entrepreneurship new venture creation*. New Delhi: Prentice Hall of India.
6. Kaplan, J. (2004). *Patterns of entrepreneurship*. Wiley.
7. Khandwalla, P. (2003). *Corporate creativity*. New Delhi: Tata Mc. Graw Hill.
8. Mullins, J. (2004). *New business road test*. New Delhi: Prentice Hall.
9. Nicholls, A. (Ed.). (2006). *Social entrepreneurship new models of sustainable social change*. Oxford University Press.
10. Prahalad, C. K. (2006). *Fortune at the bottom of the pyramid, eradicating poverty through profits*. Wharton school Publishing.
11. Scarborough & Zimmerer, *Effective Small Business Management*
12. Stevenson, H. (Ed.). (2007). *Perspective on entrepreneurship*. Boston: Harvard Business Press.

## FOURTH SEMESTER

**1. Core Discipline Paper:**  
**Paper Code: BAC 4.1**

**BUSINESS RESEARCH**  
**Credit Points: 6**

**Objective:** To provide an exposure to the students pertaining to the nature and extent of research orientation, which they are expected to possess when they enter the industry as practitioners. To give them an understanding of the basic techniques and tools of business marketing research.

### **Course Content:**

**Unit I:** Nature and Scope of Marketing Research – Role of Marketing Research in Decision making. Applications of Marketing Research – marketing research; The Research process – Steps in the research process; the research proposal; Problem Formulation: Management decision problem Vs. Marketing Research problem.

**Unit II:** Research Design: Exploratory, Descriptive, Causal. Secondary Data Research: Advantages & Disadvantages of Secondary Data, Criteria for evaluating secondary sources, secondary sources of data in Indian Context, Syndicated Research (in India)

**Unit III:** Primary Data Collection: Survey Vs. Observations. Comparison of self administered, telephone, mail, emails techniques. Qualitative Research Tools: Depth Interviews focus groups and projective techniques; Measurement & Scaling: Primary scales of Measurement-Nominal, Ordinal, Interval & Ratio. Scaling techniques paired comparison, rank order, constant sum, semantic differential, itemized ratings, Likert Scale; Questionnaire-form & design.

**Unit IV:** Sampling: Sampling techniques, determination of sample size; Data Analysis: Z test (mean, diff. of mean, diff. of proportion) t test (mean), paired t test, Chi square test, Introduction to theoretical concept of ANOVA, Factor Analysis and Discriminant Analysis.

**Unit V:** Types of research reports – Brief reports and Detailed reports; Report writing: Structure of the research report- Preliminary section, Main report, Interpretations of Results and Suggested Recommendations; Report writing: Formulation rules for writing the report: Guidelines for presenting tabular data, Guidelines for visual Representations.

### **Suggested Readings:**

1. *Zikmund, Babin & Carr: Business Research Methods, South-Western.*
2. *Cooper & Schindler: Business Research Methods McGraw-Hill Education,*
3. *Churchill: Marketing Research: Methodological Foundations, Cengage Learning.*
4. *Aaker, Kumar, Day - Marketing Research. Wiley.*
5. *Naresh Malhotra – Marketing Research, Pearson.*



**2. Core Discipline Paper:**  
**Paper Code: BAC 4.2**

**HUMAN RESOURCE MANAGEMENT**  
**Credit Points: 6**

**Objective:** *The objective of this course is to help the students to develop an understanding of the concept & techniques of essential functions of human resource management. The course will use and focus on Indian experiences, approaches and cases*

**Course Contents**

**Unit I:** Human Resource Management: Concept, Functions, roles, skills & competencies, HRD definition, goals and challenges. The changing environment of HRM – globalization, cultural environment, technological advances, workforce diversity, corporate downsizing, changing skill requirement, HRM support for improvement programs Work life balance, HR role in strategy formulation & gaining competitive advantage. HRM issues in Indian Organisations

**Unit II:** Human Resource Planning: Process, Forecasting demand & supply, Skill inventories Human Resource Information System (HRIS) succession planning, Job analysis – Uses, methods, Job description & Job specifications. HR accounting and Human Resource Development (HRD) audit concept. Recruitment, Selection & Orientation: internal & external sources, e- recruitment, selection process, orientation process.

**Unit III:** Training: Concept, Needs, Systematic approach to training, Methods of training. Management development: Concept & Methods. Performance management system: concept, uses of performance appraisal, performance management methods, factors that distort appraisal, appraisal interview .Career planning: career anchors, career life stages. Compensation: Steps of determining compensation, job evaluation, components of pay structure, factors influencing compensation levels, wage differentials & incentives, profit sharing, gain sharing, employees' stock option plans. Brief introduction of social security, health, retirement & other benefits.

**Unit IV:** Industrial Relations: Introduction to Industrial Relations, Trade unions role, types, functions, problems, industrial dispute- concept, causes & machinery for settlement of disputes- grievance, concepts, causes & grievance redressal machinery, discipline concept, aspect of discipline & disciplinary procedure, Collective bargaining- concept, types, process, problems, essentials of effective collective bargaining.

***Suggested Readings:***

1. *De Cenzo, D.A. & Robbins: Fundamentals of Human Resource Management, New York: John Wiley & Sons.*
2. *Dessler, G: Human Resource Management, Pearson.*
3. *Monappa & Saiyaddin: Personnel Management, Tata McGraw Hill.*
4. *Rao, V.S.P.: Human Resource Management- Text and Cases, Excel Books.*
5. *R. Wayne Mondy & Rober M. Noe: Human Resource Management, Pearson.*

**3. Core Discipline Paper:**  
**Paper Code: BAC 4.3**

**FINANCIAL MANAGEMENT**  
**Credit Points: 6**

**Objective:** To acquaint students with the techniques of financial management and their applications for business decision making.

**Course Contents:**

**Unit I:** Nature of Financial Management: Finance and related disciplines; Scope of Financial Management; Profit Maximization, Wealth Maximization - Traditional and Modern Approach; Functions of finance – Finance Decision, Investment Decision, Dividend Decision; Objectives of Financial Management; Organisation of finance function; Concept of Time Value of Money, present value, future value, and annuity; Risk & Return: Historical return, expected return, absolute return, holding period return, annualized return, arithmetic & geometric return; Risk - Systematic & unsystematic risk – their sources and measures.

**Unit II:** Long -term investment decisions: Capital Budgeting - Principles and Techniques; Nature and meaning of capital budgeting; Estimation of relevant cash flows and terminal value; Evaluation techniques - Accounting Rate of Return, Net Present Value, Internal Rate of Return & MIRR, Net Terminal Value, Profitably Index Method. Concept and Measurement of Cost of Capital: Explicit and Implicit costs; Measurement of cost of capital; Cost of debt; Cost of perpetual debt; Cost of Equity Share; Cost of Preference Share; Cost of Retained Earning; Computation of over-all cost of capital based on Historical and Market weights.

**Unit III:** Capital Structures: Approaches to Capital Structure Theories - Net Income approach, Net Operating Income approach, Modigliani-Miller (MM) approach, Traditional approach, Capital Structure and Financial Distress, Trade-Off Theory. Dividend Policy Decision - Dividend and Capital; The irrelevance of dividends: General, MM hypothesis; Relevance of dividends: Walter's model, Gordon's model; Leverage Analysis: Operating and Financial Leverage; EBIT -EPS analysis; Combined leverage.

**Unit IV:** Working Capital Management: Management of Cash - Preparation of Cash Budgets (Receipts and Payment Method only); Cash management technique, Receivables Management – Objectives; Credit Policy, Cash Discount, Debtors Outstanding and Ageing Analysis; Costs - Collection Cost, Capital Cost, Default Cost, Delinquency Cost, Inventory Management (Very Briefly) - ABC Analysis; Minimum Level; Maximum Level; Reorder Level; Safety Stock; EOQ, Determination of Working Capital.

**Suggested Readings:**

1. *M.Y. Khan & P.K. Jain: Financial Management Text Problem and Cases, Tata McGraw Hill PUBLISHING Co. Ltd.*
2. *R. P. Rustogi: Financial Management: Theory Concepts and Practices, Taxmann Publication.*
3. *I.M. Pandey: Financial Management: Theory and Practices, Vikas Publishing House*
4. *R.A. Brealey, S.C. Myers, F. Allen & P. Mohanty: Principles of Corporate Finance, McGraw Hill Higher Education*
5. *J.V. Horne & J.M. Wachowicz: Fundamentals of Financial Management Prentice*

**Objectives:** To understand the production and operation function and familiarize students with the technique for planning and control.

**Course contents:**

**Unit I:** Introduction to Production & Operations Management: Definition, need, responsibilities, key decisions of OM, goods vs. services. Operations as a key functional area in an organisation. Operation Strategies-Definition, relevance, strategy formulation process, order qualifying and order winning attribute Maintenance Management: Need of maintenance management, equipment life cycle (Bathtub curve), measures for maintenance performance (MTBF, MTTR and availability). Lean production: Definition of lean production, lean Demand Pull logic, waste in operations, elements that address elimination of waste, 2 card kanban Production Control system.

**Unit II:** Forecasting-Definition, types, qualitative (grass roots, market research and delphi method) and quantitative approach (simple moving average method, weighted moving average and single exponential smoothing method), forecast error, MAD. Scheduling: Operation scheduling, goals of short term scheduling, job sequencing (FCFS, SPT, EDD, LPT, CR) & Johnson's rule on two machines, Gantt charts.

**Unit III:** Process Selection: Definition, Characteristics that influence the choice of alternative processes (volume and variety), type of processes- job shop, batch, mass and continuous, product-process design Matrix and Services design matrix, technology issues in process design, flexible manufacturing systems (FMS), computer integrated manufacturing (CIM). Layout Decision: Layout planning – Benefits of good layout, importance, different types of layouts (Process, Product, Group technology and Fixed position layout). Assembly line balancing by using LOT rule; Location Decisions & Models: Facility Location – Objective, factors that influence location decision, location evaluation methods- factor rating method. Capacity Planning: Definition, measures of capacity (input and output), types of planning over time horizon. Decision trees analysis

**Unit IV:** Aggregate Planning: Definition, nature, strategies of aggregate planning, methods of aggregate planning (level plan, chase plan and mixed plan, keeping in mind demand, workforce and average inventory), Statistical Quality control: Variations in process (common & assignable causes), Control charts: Variable measures (mean and range chart), Attribute measures (proportion of defects and no. of defects) using control tables. Elementary Queuing Theory : Poisson- Exponential Single Server Model with Infinite Population.(question based on M/M/1.

**Suggested Readings:**

1. Mahadevan B, *Operations Management Theory & Practice*, Pearson Education
2. Heizer Jay and Render Barry , *Production & Operations Management*, Pearson Education
3. Chase R B, Aquilano N J , Jacobs F R and Agarwal N, *Production & Operations Management Manufacturing and Services*, Tata McGraw Hill
4. S.P. Gupta , *Statistical methods*, Sultan Chand & Sons .
5. Adam,E.E and Ebert, *Production & operations Management*, Prentice Hall of India, New Delhi
6. S.N. Chary, *Production & operations management – Tata McGraw Hill*, New Delhi
7. Buffa E S, &Sarin R K, *Modern Production / Operations Management (8th edition)* John Wiley, 1994
8. Gaither and Frazier, *Operations Management*, Thomson South-Western
9. *Operations Research*, P. K. Gupta, Man Mohan, KantiSwarup, Sultan Chand
10. *Operations Research*, V. K. Kapoor. Sultan Chand & Sons

## FIFTH SEMESTER

**1. Core Discipline Paper: QUANTITATIVE TECHNIQUES FOR MANAGEMENT**  
**Paper Code: BAC 5.1** **Credit Points: 6**

**Objective:** To acquaint students with the construction of mathematical models for managerial decision situations and to use computer software packages to obtain a solution wherever applicable. The emphasis is on understanding the concepts, formulation and interpretation.

### Course contents:

**Unit I:** Linear Programming: Formulation of L.P. Problems, Graphical Solutions (Special cases: Multiple optimal solution, infeasibility, unbounded solution); Simplex Methods (Special cases: Multiple optimal solution, infeasibility, degeneracy, unbounded solution) Big-M method and Two-phase method; Duality and Sensitivity (emphasis on formulation & economic interpretation); Formulation of Integer programming, Zero-one programming, Goal Programming.

**Unit II:** Elementary Transportation: Formulation of Transport Problem, Solution by N.W. Corner Rule, Least Cost method, Vogel's Approximation Method (VAM), Modified Distribution Method. (Special cases: Multiple Solutions, Maximization case, Unbalanced case, prohibited routes) Elementary Assignment: Hungarian Method, (Special cases: Multiple Solutions, Maximization case, Unbalanced case, Restrictions on assignment.)

**Unit III:** Network Analysis: Construction of the Network diagram, Critical Path- float and slack analysis (Total float, free float, independent float), PERT, Project Time Crashing

**Unit IV:** Decision Theory: Pay off Table, Opportunity Loss Table, Expected Monetary Value, Expected Opportunity Loss, Expected Value of Perfect Information and Sample Information Markov Chains: Predicting Future Market Shares, Equilibrium Conditions (Questions based on Markov analysis) Limiting probabilities, Chapman Kolmogorov equation. Introduction to Game Theory: Pay off Matrix- Two person Zero-Sum game, Pure strategy, Saddle point; Dominance Rule, Mixed strategy, Reduction of  $m \times n$  game and solution of  $2 \times 2$ ,  $2 \times s$ , and  $r \times 2$  cases by Graphical and Algebraic methods; Introduction to Simulation: Monte Carlo Simulation

### Suggested Readings:

1. N. D. Vohra: *Quantitative Management*, Tata McGraw Hill.
2. P. K. Gupta, Man Mohan, KantiSwarup: *Operations Research*, Sultan Chand.
3. V. K. Kapoor: *Operations Research*, Sultan Chand & Sons.
4. J. K. Sharma: *Operations Research Theory & Applications*, Macmillan India Limited.

**Objective:** To gain knowledge of the branches of law which relate to business transactions, certain corporate bodies and related matters. Also, to understand the applications of these laws to practical commercial situations.

**Course contents:**

**Unit I:** The Indian Contract Act 1872: Meaning and Essentials of contract; Kinds of contract- Based on: validity, formation & performance, law relating to offer and acceptance, consideration, competency to contract, free consent, Void agreements, performance of contracts, discharge of contracts, breach of contracts and quasi contract, Special contracts: contract of indemnity and guarantee, bailment and pledge, and agency.

**Unit II:** Sale of Goods Act 1930: Sale and agreement to sell, implied conditions and warranties, sale by non-owners, rights of unpaid seller. Negotiable Instruments Act 1881: Meaning of negotiable instruments, type of negotiable instruments, promissory note, bill of exchange, cheque.

**Unit III:** The Companies Act 2013: Meaning and types, Incorporation, Memorandum & Articles of association, Prospectus, Issue of shares and bonus shares, rights issue, sweat equity, role of directors, share qualification, company meetings. The Limited Liability Partnership Act 2008: Meaning and nature of limited partnership, formation, partners & their relations, extent and limitation of liability.

**Unit IV:** Consumer Protection Act 1986: Objectives and machinery for consumer protection, defects and deficiency removal, rights of consumers. The Right to Information Act 2005: Salient features and coverage of the act, definition of terms information, right, record, public authority; obligations of public authorities, requesting information and functions of PIO.

**Suggested Readings:**

1. *M.C.Kucchal: Business Law/Mercantile Law, Vikas Publishing.House (P) Ltd.*
2. *M.C.Kucchal, & Vivek Kucchal: Business Legislation for Management, Vikas Publishing House (P) Ltd.*
3. *Dr. G. K. Kapoor & Sanjay Dhamija: Company Law and Practice-A comprehensive textbook on Companies Act 2013, latest edition, Taxmann.*
4. *Ayatar Singh: Principle of Mercantile Law, Eastern Book Company*
5. *Gulshan Kapoor: Business Law, New Age International Pvt Ltd Publishers.*
6. *Maheshwari & Maheshwari: Principle of Mercantile Law, National Publishing Trust*
7. *Rohini Aggarwal: Mercantile & Commercial Law, Taxmann.*

**3. Discipline Specific Elective Paper: DISTRIBUTION AND SUPPLY CHAIN  
MANAGEMENT  
(DSE-I MARKETING)**

**Paper Code: BAD 5.3**

**Credit Points: 6**

**Objective:** This course would help students develop an understanding about the role of marketing channels, distribution and supply chain, key issues of supply chain and the drivers of supply chain performance. The course would acquaint the students with various concepts.

**Course Contents**

**Unit I:** The channel system: Rationale for marketing channel structures, Composition of marketing channels, Channel Environment.

**Unit II:** Distribution – Basic concept, Transportations, Inventory, Warehousing, Managing logistics.

**Unit III:** Concepts and importance of a Supply Chain (SC), Key issues of Supply Chain Management, Competitive and SC strategies, Achieving strategic fit.

**Unit IV:** Dynamics of supply chain: Supply Chain Integration, Push-based, Pull-based and Push-Pull based supply chain, Demand Forecasting in a Supply Chain, Managing inventory in SC environment: Transportation in SC environment.

**Unit V:** Strategic Alliances, Third party and fourth party logistics, Retailer- Supplier partnerships (RSP), Supplier evaluation and selection, Use of best practices and Information Technology (IT) in Supply Chain Management.

**Suggested Readings:**

1. Ayers, J. B. (2006). *Handbook of supply chain management (2nd ed.)*. Florida: Auerbach Publication.
2. Ballou, R. H., & Srivastava, S. K. (2008). *Business logistics/ supply chain management (5th ed.)*. New Delhi: Pearson Education.
3. Chopra, S., & Meindl, P. (2007). *Supply chain management: Strategy, planning and operation (3rd ed.)*. New Delhi: Pearson Education.
4. Coyle, J. J., Bardi, L. J., & Langley, C. J. (2008). *The management of business logistics (7th ed.)*. USA: South-Western.
5. Dornier, P. P., Ernst, R., Fender, M., & Kouvelis, P. (1998). *Global Operations Management and Logistics: Text and Cases*. New York: John Wiley & Sons.
6. Mentzer, J. T. (2001). *Supply chain management*. New Delhi: Sage Publications.
7. Monczka, R. M., Handfield, R. B., Giunipero, L. C., & Petterson, J. L. (2009). *Purchasing and supply chain management (4th ed.)*. USA: Cengage Learning.
8. Raghuram, G., & Rangaraj, N. (2000). *Logistics and supply chain management: cases and concepts*. New Delhi: Macmillan.
9. Shah, J. (2009). *Supply chain management: Text and cases*. New Delhi: Pearson Education.
10. Simchi-Levi, D., Kaminsky, P, Simchi-Levi, E., & Shankar, R. (2008). *Designing and managing the supply chain (3rd ed.)*. New Delhi: Tata McGraw Hill.
11. Coughlan, Anderson, Stern, *Marketing Channels*, Prentice Hall.

#### 4. Discipline Specific Elective Paper:

#### MARKETING OF SERVICES (DSE- II MARKETING)

Paper Code: BAD 5.4

Credit Points: 6

**Objective:** *The course is designed to equip students with the knowledge of marketing of all types of services.*

#### Course Contents:

**Unit I:** The emergence of service economy: contributory factors, consumption pattern analysis, economic transformation unique aspects of services: goods, services, products, managerial challenges.

**Unit II:** Marketing mix: concept of value and value drivers, extended framework Service marketing system: production, marketing, human resources, sequential analysis.

**Unit III:** Service system positioning: service delivery process, blueprinting Service buying behaviour; difference in perspective, risk analysis, decision process.

**Unit IV:** Service marketing strategy; segmentation, targeting and positioning, market innovation Competitive differentiation; competitive advantage and value chain analysis

**Unit V:** Service quality; concept, technical and functional quality, Service quality models and measurement Demand and supply imbalances management; challenges and strategies; Service culture; managing by values, recovery and empowerment; Relationship building: relationship marketing, bonding and life time value Service industries: insurance, banking, air transportation, courier, education etc.

#### **Suggested Readings:**

1. Fisk, R. P., Grove, S. J., & John, J.: *Interactive services marketing*. New York. Houghton Mifflin.
2. Glynn, W. J., & Barnes, J. G.: *Understanding services management - Integrating marketing, organizational behaviour, operations and human resources management*, Prentice Hall.
3. Gronroos, C.: *Service Management and Marketing - A customer relationship management approach*, New York: John Wiley.
4. Hoffman, K. D., & John, E. G. B.: *Marketing of services: Concepts strategies and cases*, Thomson-South Western.
5. Shanker, R. (2002). *Services Marketing: The Indian perspective*, Excel Books.

## SIXTH SEMESTER

**1. Core Discipline Paper:**  
**Paper Code: BAC 6.1**

**STRATEGIC MANAGEMENT**  
**Credit Points: 6**

**Objective:** To equip students with the necessary inside into designing strategies for an organisation and linking the organisations strategies with the changing environment. The course will focus on Indian cases, approaches and experiences.

### **Course contents:**

**Unit I:** Nature & importance of business policy & strategy: Introduction to the strategic management process and related concepts; Characteristics of corporate, business & functional level strategic management decisions. Company's vision and mission: need for a mission statement, criteria for evaluating a mission statement- Goal, Process & Input formulation of the mission statement-Drucker's Performance Area, Bennis's Core Problem; formulation of mission statement.

**Unit II:** Environmental Analysis & Diagnosis: Analysis of company's external environment Environmental impact on organisations policy and strategy, organisations dependence on the environment, analysis of remote environment, analysis of specific environment- Michael E. Porter's 5 Forces model; Internal analysis: Importance of organisation's capabilities, competitive advantage and core competence, Michael E. Porter's Value Chain Analysis.

**Unit III:** Formulation of competitive strategies: Michael E. Porter's generic competitive strategies, implementing competitive strategies- offensive & defensive moves. Formulating Corporate Strategies: Introduction to strategies of growth, stability and renewal, Types of growth strategies – concentrated growth, product development, integration, diversification, international expansion (multi domestic approach, franchising, licensing and joint ventures), Types of renewal strategies – retrenchment and turnaround. Strategic fundamentals of merger & acquisitions.

**Unit IV:** Strategic Framework: Strategic analysis & choice, Strategic gap analyses, portfolio analyses – BCG, GE, product market evolution matrix, experience curve, directional policy matrix, life cycle portfolio matrix, grand strategy selection matrix;

**Unit V:** Behavioural considerations affecting choice of strategy; Culture and Strategic Leadership: Implementing & operationalizing strategic choice, Impact of structure, culture & leadership, functional strategies & their link with business level strategies, Balanced Score Card; Introduction to Strategic control & evaluation, Strategic surveillance.

### **Suggested Readings:**

1. J.A. Pearce & R.B. Robinson : *Strategic Management formulation implementation and control*, TMH
2. Arthur A. Thompson Jr. & A.J Strickland III : *Crafting and executing strategy*, TMH

### **Supplementary Readings**

1. Gerry Johnson & Kevan Scholes, *Exploring corporate strategies*, PHI
2. Upendra Kachru: *Strategic Management*, Excel books
3. Arthur A. Thompson Jr. and A.J. Strickland: *Strategic Management –Concepts and Cases*, McGraw-Hill Companies
4. Lawrence R. Jauch & William F. Glueck: *Business Policy and Strategic Management (Mcgraw Hill Series in Management)*.



**2. Core Discipline Paper:**  
**Paper Code: BAC 6.2**

**FINANCIAL INSTITUTIONS AND MARKETS**  
**Credit Points: 6**

**Objective:** *The objective of this paper is to introduce students to the different aspects and components of financial Institutions and financial markets. This will enable them to take the rational decision in financial environment.*

**Course Content:**

**Unit I:** Structure of Indian Financial System: An overview of the Indian financial system, financial sector reforms: context, need and objectives; major reforms in the last decade; competition; deregulation; capital requirements; issues in financial reforms and restructuring; future agenda of reforms; Regulation of Banks, NBFCs & FIs: Salient provisions of banking regulation act and RBI Act; Role of RBI as a central banker; Products offered by Banks and FIs: Retail banking and corporate banking products. Universal Banking: need, importance, trends and RBI guidelines, Core banking solution (CBS); RTGS and internet banking, NBFCs and its types; comparison between Banks and NBFCs

**Unit II:** Introduction to Financial Markets in India: Role and Importance of Financial Markets, Financial Markets: Money Market; Capital Market; Factors affecting Financial Markets, Linkages Between Economy and Financial Markets, Integration of Indian Financial Markets with Global Financial Markets, Primary & secondary market, Currency Market, Debt Market- role and functions of these markets. Primary Market for Corporate Securities in India: Issue of Corporate Securities: Public Issue through Prospectus, Green shoe option, Offer for sale, Private Placement, Rights Issue, On-Line IPO, Book Building of Shares, Disinvestment of PSU, Employees Stock Options, Preferential Issue of Shares, Venture Capital, Private Equity, Performance of Primary Market in India, Corporate Listings : Listing and Delisting of Corporate Stocks.

**Unit III:** Secondary Market in India: Introduction to Stock Markets, Regional and Modern Stock Exchanges, International Stock Exchanges, Demutualization of exchanges, Comparison between NSE and BSE, Raising of funds in International Markets: ADRs and GDRs, FCCB and Euro Issues; Indian Stock Indices and their construction, maintenance, adjustment for corporate actions (rights, bonus and stock split;) on index with numerical, free float vs. full float methodology, Classification of Securities to be included in the Index, Bulls and Bears in Stock Markets, Factors influencing the movement of stock markets, indicators of maturity of stock markets, Major Instruments traded in stock markets: Equity Shares, Debentures, Myths attached to Investing in Stock Markets. Trading of securities on a stock exchange; Selection of broker, capital and margin requirements of a broker, MTM and VAR Margins, kinds of brokers, opening of an account to trade in securities, DEMAT System, placing an order for purchase/sale of shares, margin trading and margin adjustment, contract note and settlement of contracts, Algorithmic trading, Settlement mechanism at BSE & NSE

**Unit IV:** Money Markets & Debt Markets in India: Money Market: Meaning, role and participants in money markets, Segments of money markets, Call Money Markets, Repos and reverse Repo concepts, Treasury Bill Markets, Market for Commercial Paper, Commercial Bills and Certificate of Deposit. Role of STCI and DFHI in money market, Debt Market: Introduction and meaning, Market for Government/Debt Securities in India, Secondary market for government/debt securities, Over subscription and devolvement of Government Securities, Government securities issued by State Governments, Municipal Bonds, Corporate Bonds vs. Government Bonds

Readings: 1. Saunders, Anthony & Cornett, Marcia Millon (2007). Financial Markets and Institutions (3rd ed.). Tata McGraw Hill 2. Khan, M.Y. (2010). Financial Services (5th ed.). McGraw Hill Higher Education 3. Shahani, Rakesh(2011). Financial Markets in India: A Research Initiative. Anamica Publications 4. Goel, Sandeep. (2012). Financial services. PHI. 5. Gurusamy, S. (2010). Financial Services. TMH.

### 3. Skill Enhancement Course:

**Paper Code: BAS 6.3**

**SUMMER INTERNSHIP**

**Credit Points: 2**

**Objective:** *The objective of doing the Summer Internship is to inculcate the students the ability to apply their theoretical knowledge and skills developed during the course of the study and apply it in the field. They have to collect data and prepare a report of their findings on some topics suggested to them or chosen by themselves in consultation with the faculty guide. This will teach them the methodology of collecting information and of preparing written work along with understanding the importance and value of field work.*

**A student will submit report of Summer Internship of six to eight weeks which will be internally evaluated**

**4. Discipline Specific Elective Paper:            ADVERTISING AND BRAND MANAGEMENT  
(DSE-III MARKETING)**

**Paper Code: BAD 6.4**

**Credit Points: 6**

**Objective:** *To equip the students with the nature, purpose & complex constructions in the planning and execution of a successful advertising program. The course will expose student to issues in brand management, faced by firms operating in competitive markets.*

**Course Contents:**

**Unit I:** Advertising need & importance: Definition & growth of modern advertising, advertising & the marketing mix, types & classification of advertisement, advertising spiral; Social & economic aspects of advertising; Marketing communication models: AIDA, hierarchy of effect, innovation adoption model, action first model, quick decision model; Planning framework of promotional strategy

**Unit II:** How advertising works: Exposure, salience, familiarity, low involvement, central route & peripheral route & cognitive learning; Positioning strategies ; Associating feelings with a brand; Developing brand personality ; Creating copy strategies: Rational & emotional approaches, selection of an endorser, creative strategy & style- brand image, execution, USP, common touch & entertainment, message design strategy, format & formulae for presentation of appeals (slice of life, testimonials, etc.), different types of copy; Art & layout of an advertisement: Principles of design, layout stages, difference in designing of television, audio & print advertisement

**Unit III:** Media planning & scheduling: Introduction to broadcast & non -broadcast media; Budgeting decision rule: percentage of sales method, objective to task method, competitive parity, & all you can afford; Key factors influencing media planning; Media decisions: media class, media vehicle & media option; Scheduling: flighting, pulsing, & continuous

**Unit IV:** Management of sales promotion: Importance & need for sales promotion, planning for consumer schemes & contests, different types of consumer schemes.

**Unit V:** Introduction to brands and brand management, Concept of a brand, brand evolution, branding challenges and opportunities, Strategic brand management process.

**Unit VI:** Identifying and establishing brand positioning and values; Brand building, brand positioning and values brand repositioning.

**Unit VII:** Designing and implementing brand strategies; Brand extension. Brand hierarchy Kapfrer. Brand equity, brand personality, brand image, managing brands overtime. Integrating advertising and brand management

**Note:** *Applied cases would be taken up in class.*

**Suggested Reading**

1. *Aaker, Myers &Batra : Advertising Management , Prentice Hall.*
2. *Wells, Moriarity & Burnett : Advertising Principles & practices , Prentice Hall.*
3. *Kleppner's Advertising Procedure: W.Ronald Lane, kane Whitehill king and J. Thomas Russell, Pearson Education.*
4. *George E.Belch& Michael A. Balch : Advertising and Promotion, TMH*
5. *S.H.H Kazmi and SatishK.Batra : Advertising and sales promotion, Excel books*
6. *Cowley. D: Understanding Brands, , Kogan Page Ltd*
7. *Jean Noel Kampferer: Strategic Brand Management, Kapferer Free Press*
8. *David Aaker: Brand Leadership, Simon & Schuster*
9. *Wright, Winter, Ziegler: Advertising, Atlantic Publishers & Dist.*
10. *Sandage, Fryburger,: Advertising Theory & Practice, Ratroll Longman Group*

## 5. Discipline Specific Elective Paper:

## RETAIL MANAGEMENT (DSE-IV MARKETING)

Paper Code: BAD 6.5

Credit Points: 6

**Objective:** The primary objective of the course is to have students develop marketing competencies in retailing and retail consulting. The course is designed to prepare students for positions in the retail sector or positions in the retail divisions of consulting companies. Besides learning more about retailing and retail consulting, the course is designed to foster the development of the student's critical and creative thinking skills.

### Course Contents

**Unit I:** Introduction to Retailing, Definition, Characteristics, Evolution of Retailing in India, Retailing in India, Emerging Trends in Retailing, Factors Behind the change of Indian Retail Industry. Retail Formats: Retail Sales by ownership, On the basis of Merchandise offered, non-store Based retail mix & Non traditional selling.

**Unit II:** Store Planning: Design & Layout, Location Planning and its importance, retailing image mix, Effective Retail Space Management, Floor Space Management. Retail Marketing: Advertising & Sales Promotion, Store Positioning, Retail Marketing Mix, CRM, Advertising in Retailing.

**Unit III:** Retail Merchandising: Buying function, Markups & Markdown in merchandise management, shrinkage in Retail merchandise management. Merchandise Pricing: Concept of Merchandise Pricing, Pricing Options, Pricing Strategies, Pricing Objectives, Types of Pricing.

**Unit VI:** Retail Operation: Elements/Components of Retail Store Operation, Store Administration, Store Manager –Responsibilities, Inventory Management, Management of Receipts, Customer Service, Management of Retail Outlet/Store, Store Maintenance, Store Security.

**Unit V:** Emerging trends in retailing: Changing nature of retailing, Organized retailing, Modern retail formats, E-tailing, Challenges faced by the retail sector

### Suggested Readings

1. Cullen & Newman: *Retailing – Environment & Operations*, Cengage Learning EMEA
2. Berman & Evarv: *Retail Management*, Perntice Hall.
3. Bajaj, Tuli & Srivastava: *Retail Management- Oxford University Publications*
4. Gibson G Vedamani: *Retail Management: Functional principles & practices*, Jaico Publishing House.
5. Harjit Singh: *Retail Management*, S. Chand Publication.

# Ability Enhancement Course

## ESA 2.3: Environmental Studies

### CONTENTS

#### Unit I: Introduction to environmental Studies and Ecosystems. (4 lectures)

- 1) Multidisciplinary nature of environmental studies:
- 2) Scope and importance of environmental studies
- 3) What is an ecosystem? Structure and function of ecosystem; Energy flow in an ecosystem; food chain, food webs and ecological succession, ecological pyramid.

#### Unit 2: Natural Resources: Renewable and non-renewable Resources (7 lectures)

- 1) Land resources and land use change: Land degradation, soil erosion and desertification.
- 2) Deforestation: causes and impacts due to mining, dam building on environment, forests, biodiversity and tribal populations
- 3) Water: use and over-exploitations of surface and ground water, floods, droughts, conflicts over water (international and inter-state).
- 4) Energy resources: Renewable and non-renewable energy sources, use of alternate energy sources, growing energy needs.

#### Unit 3: Biodiversity and conservation (8 lectures)

- 1) Levels of biological diversity; genetic, species and ecosystem diversity; Bio geographic zones of India, global biodiversity hot spots.
- 2) India as a mega-biodiversity nation: Endangered and endemic species of India.
- 3) Threats to biodiversity: Habitat loss, poaching of wildlife, man-wildlife conflicts; conservation of biodiversity; in-situ and ex-situ conservation of biodiversity.
- 4) Ecosystem and biodiversity services; Ecological, economic, social, ethical, aesthetic and informational value.

#### Unit 4: Environmental Pollution, Policies and Practices (10 lectures)

- 1) Environmental pollution: types, causes, effects and controls: Air, water, soil and noise pollution.
- 2) Nuclear hazards and human health risks
- 3) Solid waste management: Control measures of urban and industrial waste.
- 4) Climate Change, global warming, ozone layer depletion, acid rain and impacts on human communities and agriculture.
- 5) Environment Laws: Introduction and Concept-Environment Protection Act; Air (Prevention and Control of Pollution) Act; Water (Prevention and Control of Pollution) Act; Wild life Protection Act; Forest Conservation Act.

#### Unit 5: Human Communities and the Environment (4 lectures)

- 1) Human population growth: Impacts on environment, human health and welfare.
- 2) Resettlement and rehabilitation of project affected persons, case studies.
- 3) Disaster management: floods, earthquake, cyclones and landslides.
- 4) Environmental communication and public awareness.

- 1) Students should submit a report at during the semester based on the field visit to a local polluted site- air/water/solid waste.
- 2) Assignments/ Seminar/ class test etc

## Suggested Readings:

- 1) Carson, R. 2002. *Silent Spring*. Houghton Mifflin Harcourt.
- 2) Gadgil, M., & Guha, R. 1993. *This Fissured Land: An Ecological History of India*. Univ. of California Press.
- 3) Gleeson, B. and Low, N. (eds.) 1999. *Global Ethics and Environment*, London, Routledge.
- 4) Gleick, P. H. 1993. *Water in Crisis*. Pacific Institute for Studies in Dev., Environment & Security. Stockholm Env. Institute, Oxford Univ. Press.
- 5) Groom, Martha J., Gary K. Meffe, and Carl Ronald Carroll. *Principles of Conservation Biology*. Sunderland: Sinauer Associates, 2006.
- 6) Grumbine, R. Edward, and Pandit, M.K. 2013. Threats from India's Himalaya dams. *Science*, 339: 36-37.
- 7) McCully, P. 1996. *Rivers no more: the environmental effects of dams* (pp. 29-64). Zed Books.
- 8) McNeill, John R. 2000. *Something New Under the Sun: An Environmental History of the Twentieth Century*.
- 9) Odum, E.P., Odum, H.T. & Andrews, J. 1971. *Fundamentals of Ecology*. Philadelphia: Saunders.
- 10) Pepper, I.L., Gerba, C.P. & Brusseau, M.L. 2011. *Environmental and Pollution Science*. Academic Press.
- 11) Rao, M.N. & Datta, A.K. 1987. *Waste Water Treatment*. Oxford and IBH Publishing Co. Pvt. Ltd.
- 12) Raven, P.H., Hassenzahl, D.M. & Berg, L.R. 2012. *Environment*. 8th edition. John Wiley & Sons.
- 13) Rosencranz, A., Divan, S., & Noble, M. L. 2001. *Environmental law and policy in India*. Tripathi 1992.
- 14) Sengupta, R. 2003. *Ecology and economics: An approach to sustainable development*. OUP.
- 15) Singh, J.S., Singh, S.P. and Gupta, S.R. 2014. *Ecology, Environmental Science and Conservation*. S. Chand Publishing, New Delhi.
- 16) Sodhi, N.S., Gibson, L. & Raven, P.H. (eds). 2013. *Conservation Biology: Voices from the Tropics*. John Wiley & Sons.
- 17) Thapar, V. 1998. *Land of the Tiger: A Natural History of the Indian Subcontinent*.
- 18) Warren, C. E. 1971. *Biology and Water Pollution Control*. WB Saunders.
- 19) Wilson, E. O. 2006. *The Creation: An appeal to save life on earth*. New York: Norton.
- 20) World Commission on Environment and Development. 1987. *Our Common Future*. Oxford University

# **Post Graduate Section**

**ST. JOSEPH'S COLLEGE (AUTONOMOUS), JAKHAMA  
PG DEPT. OF ENGLISH**

**COURSE STRUCTURE AND SYLLABUS FOR M.A. in ENGLISH PROGRAMME**

Credits to be completed for award of the degree: 76

Minimum duration: 4 semesters (two years)

Maximum duration: 6 semesters (three years)

**COURSE STRUCTURE**

**Semester I**

**Total credits 16+3=19**

Course Code	Course Name	L-T-P	CH	CR	Course Type	Skill Based Course
						Yes/No
MEGC 1.1	English Literature from Chaucer to Marlowe	3-1-0	4	4	Foundation course	No
MEGC 1.2	Shakespearean Drama	3-1-0	4	4	Core	No
MEGC 1.3	Fiction I (Early to Jane Austen)	3-1-0	4	4	Core	No
MEGC 1.4	Literary Theory and Criticism I	3-1-0	4	4	Core	No
MEGT 1.5	Literature and Film-I			3		

**Semester II**

**Total credits 16+3=19**

Course Code	Course Name	L-T-P	CH	CR	Course Type	Skill Based Course
						Yes/No
MEGC 2.1	Puritan to Eighteenth Century Literature (Poetry and Drama)	3-1-0		4	Core	Yes
MEGC 2.2	Romantic Poetry and Prose	3-1-0	4	4	Core	No
MEGC 2.3	Fiction II (Nineteenth Century )	3-1-0	4	4	Core	No
MEGC 2.4	Literary Theory and Criticism II	3-1-0	4	4	Core	No
MEGT 2.5	Literature and Film-II			3		



**Semester III****Total credits 16+3=19 (Elective any one)**

Course Code	Course Name	L-T-P	CH	CR	Course Type	Skill Based Course
						Yes/No
MEGC 3.1	Modern Drama	3-1-0	4	4	Core	No
MEGC 3.2	Modern Fiction	3-1-0	4	4	Core	No
MEGC 3.3	Postcolonial Literatures in English-I	3-1-0	4	4	Core	No
MEGC 3.4A	Translation I	3-1-0	4	4	Elective	Yes
MEGC 3.4B	Gender and Literature I	3-1-0	4	4	Elective	No
MEGC 3.4C	American Literature I	3-1-0	4	4	Elective	No
MEGC 3.4D	Indian Writing in English I	3-1-0	4	4	Elective	No
MEGC 3.4E	ELT I	3-1-0	4	4	Elective	Yes
MEGT 3.5	Literature of Northeast India -I			3		

**Semester IV****Total credits 16+3=19 (Elective any one)**

Course Code	Course Name	L-T-P	CH	CR	Course Type	Skill Based Course
						Yes/No
MEGC 4.1	Modern Poetry	3-1-0	4	4	Core	No
MEGC 4.2	Modern Prose	3-1-0	4	4	Core	No
MEGC 4.3	Postcolonial Literatures in English-II	3-1-0	4	4	Core	No
MEGC 4.4A	Translation II	3-1-0	4	4	Elective	Yes
MEGC 4.4B	Gender and Literature II	3-1-0	4	4	Elective	No
MEGC 4.4C	American Literature II	3-1-0	4	4	Elective	No
MEGC 4.4D	Indian Literature in English II	3-1-0	4	4	Elective	No
MEGC 4.4E	ELT II	3-1-0	4	4	Elective	Yes
MEGT 4.5	Literature of Northeast India -II			3		

## Core Course

### SEMESTER I

#### **MEGC 1.1: English Literature from Chaucer to Marlowe**

The aim of the course is to introduce the students to early English poetry and prose and make them read important works, keeping the historical and social context in mind.

#### **UNIT A**

Background reading: Historical and literary context of Medieval England

#### **UNIT B**

Geoffrey Chaucer: The Nun's Priest Tale/ The Miller's Prologue and Tale

#### **UNIT C**

Edmund Spenser: *The Shepheardes Calender* (Januarie/ Aprill Eclogue)/ *Amoretti and Epithalamion* sonnets (1, 8, 54, 75)

Thomas Wyatt: "My Lute Awake!"; "They Flee from me", Farewell Love"

Henry Howard: "So Cruel Prison", "The meanes to attain happy life", "The Soote Season"

Christopher Marlowe: "The Passionate Shepherd to His Love"

#### **Unit D:**

Thomas More: *Utopia* (Book I/Book II).

Sidney's "An Apology for Poetry"

#### **Reference books**

Brown, Peter. (2011). *Geoffrey Chaucer (Authors in Context)*. OUP, New York.

Ferguson, Margaret, et al., editors. (2005). *The Norton Anthology of Poetry*. Norton, New York, 5th edition.

Larsen, Kenneth J., editor. (1997). *Edmund Spenser's Amoretti and Epithalamion: A Critical Edition*. Arizona S U.

Robinson, Fred., editor. (1998). *The Riverside Chaucer*. OUP, Oxford.

#### **MEGC 1.2: Shakespearean Drama**

The aim of this course is to introduce the students to different types of Shakespearean plays with a view to bringing out the richness of the Shakespearean text. Students will be expected to read as many plays of Shakespeare as possible to deepen their appreciation of the contemporary relevance of Shakespeare.

#### **Unit A: Tragedy**

*Macbeth/ Othello/ King Lear*

#### **Unit B: Comedy**

*As You Like It/ A Midsummer Night's Dream*

#### **Unit C: Problem plays**

*Measure for Measure/ Troilus and Cressida*

#### **Unit D: Tragicomedy**

*The Tempest/ The Merchant of Venice*

\*Textbooks should preferably be Arden Editions.

#### **Reference books**

Dollimore, Jonathan and Alan Sinfield. (1994). *Political Shakespeare: Essays in Cultural Materialism*. Manchester UP, Manchester, Second Edition.

Eagleton, Terry. (1998). *William Shakespeare*. Blackwell, Oxford.

Holderness, Graham, editor. (1992). *Shakespeare's History Plays*, Macmillan, London, New Casebooks.

### **MEGC 1.3: Fiction I (Early to Jane Austen)**

This course introduces students to the English novel from the beginning to the early nineteenth century and the literary context in which the genre developed.

#### **Unit A**

Historical and Literary Context: 18th century Print Culture, Reading Public, Debates/Issues on the rise of the novel

#### **Unit B**

Samuel Richardson *Pamela*

#### **Unit C**

Ann Radcliffe *The Mysteries of Udolpho/ The Romance of the Forest*

#### **Unit D**

Jane Austen *Mansfield Park / Persuasion/Emma/* (Norton Edition)

### **Reference Books**

Azim, Firdaus. (2002). *The Colonial Rise of the Novel*. Taylor and Francis, London.

Eagleton, Terry. (2004). *The English Novel: An Introduction*. Wiley Blackwell, London.

Ford, Boris, editor. (1983). *The New Pelican Guide to English Literature*. Vol. 4 and 5 Poovy, Mary. (1985). *The Proper Lady and the Woman Writer*. U Chicago P.

Mackeen, Michael, editor. (2000). *The Theory of the Novel: A Historical Approach*. John Hopkins UP, Baltimore and London.

### **MEGC 1.4: Literary Theory and Criticism I**

The course seeks to introduce students to twentieth century western literary and critical theory. This is an extensive survey course that seeks to offer a holistic introduction to literary criticism and theory, especially historical shifts and linkages as well as critical practice, making use of selections of important texts of key thinkers of each movement.

**Unit I:** The concept of tragedy and the structure of play established by the great thinkers like Aristotle

**Topics for Background:** Classical Tragedy, Classical comedy, Classical epic

**Text for detail study:**

Aristotle: *Poetics*

**Unit II:** Will throw some light on the ideas of critical theories established by the Romantics

**Topics for Background:** Romanticism, Industrial Revolution, Age of Enlightenment

**Texts for detail study:** Wordsworth: *The Preface to the Lyrical Ballads*

Coleridge: *Biographia Literaria*: Chapters 4,13,14

**Unit III:** Will discuss the phase changing from Art for Arts' sake to Arts for Life sake to explain the concern of literary writings with human existence

**Topics for Background:** Victorian Criticism, Art for life's sake, Pre-Raphaelite Movement

**Text for detail study:** Arnold: "The Function of Criticism at the Present Time"

**Unit IV:** This part will discuss the vision of life changed after World-Wars in the western part of the world.

**Topics for Background:** New Criticism, Deconstruction, Reader Response Theory

**Text for detail study:** T.S.Eliot: "Tradition and the Individual Talent"

### **Books Recommended for further Reading:**

M.H. Abrams, *The Mirror and the Lamp: Romantic theory and the Critical Tradition* (New York, 1953)

David Lodge: (ed.) *Modern Criticism and Theory- A Reader* (Pearson, 2005)

*A Handbook of Critical Approaches to Literature* (OUP, 2005)

James Reeves, *The Critical Sense: Practical Criticism of Prose and Poetry* (William Heinemann)

*The Norton Anthology of Theory and Criticism* (2001)

## SEMESTER II

### MEGC 2.1: Puritan to Eighteenth Century Literature (Poetry and Drama)

This course aims at helping the students to develop critical insight into literary productions (poetry and drama) of the period by reading a number of key texts.

#### UNIT A

John Milton: *Paradise Lost Book IX*  
*Samson Agonistes*

#### UNIT B

Aphra Behn: *The Rover*/ R. B. Sheridan: *The School for Scandal*

#### UNIT C

Dryden: *The Preface to the Fables*  
*MacFlecknoe*

#### UNIT D

Pope: *An Essay on Man/ Dunciad Book 4*

#### Text Books:

Milton, John. (2000). *Paradise Lost*. Penguin, London.

Spencer, Jane, editor. (1998). *Aphra Behn's The Rover and Other Plays*. OUP, Oxford.

Dryden, John. (2010). *The Preface to the Fables*. Kessinger, Montana.

Pope, Alexander. (2016). *An Essay on Man*. Alexander Pope.

Rumbold, Valerie, editor. (2009). *Alexander Pope's The Dunciad in Four Books*. Taylor and Francis, Oxford.

Ordner, Michael, editor. (1998). *R. B. Sheridan's The School for Scandal and other Plays*. OUP, Oxford.

#### Reference Books:

Ferguson, Margaret, et al., editors. (2005). *The Norton Anthology of Poetry*. Norton, New York, 5th edition.

Fisk, Deborah Payne, editor. (2000). *The Cambridge Companion to English Restoration Theatre*. CUP, Cambridge.

Nicoll, Allardyce. (1923). *A History of Restoration Drama: 1660-1700*. CUP, Cambridge, 2009 edition.

Rogers, Pat., editor. (2007). *The Cambridge Companion to Alexander Pope*. CUP, Cambridge.

Kean, Margaret. (2005). *John Milton's Paradise Lost: A Sourcebook*. Psychology.

Flannagan, Roy. (2002). *John Milton: A Short Introduction*. Blackwell, Oxford.

Jack, Ian. (1971). *Augustan Satire: Invention and Idiom in English Poetry, 1660-1750*.

Clarendon, Oxford.

## **MEGC 2.2: Romantic Poetry and Prose**

This Course seeks to examine the English Romantic sensibility through some of the major poets and prose writers. Students are expected to be aware of literary, critical and political developments in England from the period of the French revolution to the beginning of the Nineteenth Century

### **Poetry**

#### **Unit A**

Wordsworth: Selections from *The Prelude*; "Ode on Intimations of Immortality"

Coleridge: 'Dejection: An Ode'  
'Frost at Midnight'

#### **Unit B**

Shelley: Adonais, 'Ode to the West Wind'  
Keats: Ode on a Grecian Urn, Ode to a Nightingale

### **Prose**

#### **Unit C**

Lamb, *Essays of Elia* (Selections)  
Coleridge, Lectures on Shakespeare (Selections)/ Selections from Thomas De Quincey

#### **Unit D**

Keats' Letters (Selections)  
Hazlitt's "The Indian Jugglers"

### **Textbooks**

Appelbaum, Stanley. Editor. (1996). *English Romantic Poetry: An Anthology*. Dover, New York. Wain, John. (1990). *The Oxford Anthology of English Poetry (From Blake to Heaney)*. OUP, Oxford.

### **Reference books**

Abrams, M.H. (2002). *Natural Supernaturalism*. Norton, New York.  
Curran, Stuart. (ed).(1993).*The Cambridge Companion to British Romanticism*. Cambridge University Press, Cambridge.  
Mahanta et. al. (2002) *Poems Old and New*. Macmillan, Chennai.  
Wimsatt, W K and Cleanth Brooks. (1957). *Literary Criticism: A Short History*. New York: Knopf, 2010 edition.

### **MEGC 2.3: Fiction II (Nineteenth Century)**

The aim of this course is to present to students the many facets of the Victorian novel in tandem with the social, political and intellectual background of the Victorian Age. It also aims to acquaint them with the change in the form of the novel from the previous ages.

#### **UNIT A**

Charles Dickens: *Bleak House/Nicholas Nickleby/ David Copperfield*

#### **UNIT B**

William M. Thackeray: *Vanity Fair*

OR

George Eliot: *Middlemarch/ The Mill on the Floss*

#### **UNIT C**

Emily Bronte: *Wuthering Heights*

OR

Elizabeth Gaskell: *North and South*

#### **UNIT D**

Thomas Hardy: *Jude, the Obscure/ Short stories (Selections)*

OR

Oscar Wilde: *The Picture of Dorian Grey*

#### **Reference books**

Bloom, Harold. (2004). *The Victorian Novel (Bloom's Period Studies)*. Infobase Publishing, New York.

Bradbury, Malcolm.(1993). *The Modern British Novel*. Penguin, London.

Eagleton, Terry. (2004). *The English Novel: An Introduction*. Willey Blackwell, London.

Gregor, Ian. (1980). *Reading the Victorian Novel: Detail Into Form*. Vision Press, London.

O'Gorman, Francis. (2005). *A Concise Companion to the English Novel*. Blackwell Publishing, Melbourne.

Tucker, Herbert F. (2014). *A New Companion to Victorian Literature and Culture*. Wiley Blackwell, Sussex.

## **MEGC 2.4: Literary Theory and Criticism II**

The course continues from Literary and Critical Theory I and seeks to introduce students to literary and critical theory both as disciplinary as well as reading tools, especially from the 1950s onwards. This is an extensive survey course that seeks to offer a holistic introduction to literary criticism and theory, especially historical shifts and linkages as well as critical practice, making use of selections of important texts of key thinkers of each major movement during this period.

### **UNIT A**

**Background Topics :** Russian Formalism, Ferdinand de Saussure, Language as a symbolic system, Intertextuality, The notion of metalanguage

#### **Text for detailed Study:**

Jacobson: *Linguistics and Poetics*

Roland Barthes: *The Death of the Author*

### **Unit B**

**Background Topics :** Karl Marx and Frederick Engels, The Russian Revolution, Friedrich Nietzsche, Deconstruction, Logocentrism

#### **Text for detailed Study:**

Edmund Wilson: *Marxism and Literature*

Jack Derrida: *Structure, Sign and Play in the discourse of Human Sciences*

### **Unit C**

**Background Topics :** Psychoanalysis, Dream Analysis, Simone de Beauvoir, Suffragette Movement, Feminism, Virginia Woolf

#### **Text for detailed Study:**

Lionel Trilling: *Freud and Literature*

Cora Kaplan: *Literature and Gender*

### **Unit D**

**Background Topics :** Homi Bhabha, Franz Fanon, Subaltern Studies, Consumerism, Culture Studies

#### **Text for detailed Study:**

Edward Said: *Crisis [in Orientalism]*

John Fiske: *Television Culture*

#### **Reference Books Recommended :**

Christopher Norris: *Deconstruction: Theory and Practice*, Routledge 1982.

David Lodge: *20th Century Literary Criticism*, Longman, 1972.

Dennis Walder: *Literature in the Modern World*, OUP & OU, 1990.

Gary Day: *Literary Criticism: A New History*, Orient Blackswan

Julie Rivkin and Michael Ryan: *Literary Theory: An Anthology*, Blackwell, 1998.

M. A. R. Habib: *Modern Literary Criticism and Theory*, Blackwell, 2008.

Michael Ryan: *Literary Theory: A Practical Introduction*, Blackwell, 1999.

Peter Barry: *Beginning Theory*, 1995.

Steven Connor: *Postmodernism*, Cambridge Companion Series, 2004.

Vincent B. Leitch: *The Norton Anthology of Theory and Criticism*, Norton & Co.

## SEMESTER III

### MEGC 3.1: Modern British Drama

This course aims at acquainting the students with the development of Modern English drama along with intellectual and social background. The students will acquire firsthand knowledge of some of the important dramatic works from the twentieth century.

#### Unit A

Background Reading: Modern British drama-historical background and trends in British drama

#### Unit B

George Bernard Shaw: *The Arms and the Man/ Pygmalion*

#### Unit C

Arnold Wesker: *Roots*/Samuel Beckett: *Endgame*

Tom Stoppard: *Rosencrantz and Guildenstern are Dead*

#### Unit D

Harold Pinter: *The Birthday Party/ The Homecoming/ The Caretaker*

#### Textbooks

Students will consult OUP/Norton/Any other standard edition of the plays

#### Reference books

Brown, John Russell, editor. (2000) . *Modern British Dramatists*. Prentice Hall, New Delhi.

Innes, Christopher. (2002). *Modern British Drama, 1890-1990*. CUP, New York.

Luckhurst, Mary Ed. (2012). *A Companion to Modern British and Irish Drama (1880-2005)*. Blackwell, London.

Smart, John. (2001). *Twentieth Century British Drama*. CUP, Cambridge.



## **MEGC 3.2: Modern Fiction**

The course seeks to introduce the student to landmark works of modernist and postmodernist fiction, allowing them to see its experimental character and concern with, among other things, the representation of psychological and sexual experience.

### **UNIT A**

James Joyce: *The Portrait of the Artist as Young Man*

### **UNIT B**

Virginia Woolf: *Mrs. Dalloway*

### **UNIT C**

Joseph Conrad: *Heart of Darkness*/E M Forster: *A Passage to India*

### **UNIT D**

John Fowles: *The French Lieutenant's Woman*/Doris Lessing: *Grass is Singing*

### **Textbooks**

Students will consult OUP/Norton/Any other standard edition of the novels

### **Reference books**

Shiach, Morag, editor. (2007). *The Cambridge Companion to the Modernist Novel*. CUP, Cambridge.

Kern, Stephen. (2011). *The Modernist Novel: A Critical Introduction*. CUP, Cambridge.

Connor, Steven.(2004). *The Cambridge Companion to Postmodernism*. CUP, Cambridge.

## **EG 303 Postcolonialism and Literature- I**

### **Unit A**

**Background Study:**Frantz Fanon, *The Wretched of the Earth*, *Black Skins White masks*, *Negritude*, Anti-colonial discourse of Fanon

### **Text for detailed study:**

*Things Fall Apart* by Chinua Achebe

### **Unit B**

**Background Study:**Edward Said, *Orientalism*, Eurocentricism, *The East as the Female Other*, Myths about the “Orient”

### **Text for detailed study:**

*Midnight's Children* Salman Rushdie

*Kim* by Rudyard Kipling

## Unit C

**Background Study:** Homi Bhabha, *The Nation and Narration*, Liminality, Mime and mimicry, hybridity

**Text for detailed study:**

*The Shadow Lines* by Amitav Ghosh

## Unit D

**Background Study:** Gayatri Chakravorty Spivak, “Can the Subaltern Speak?”, Third World Approach, Feminism and postcolonialism, Subaltern studies and postcolonialism

**Text for detailed study:**

“*Breast Stories*” by Mahasveta Devi.

## Books Recommended :

*The Postcolonial Studies Reader* ed. Bill Ashcroft, Gareth Griffiths, Helen Tiffin (London, Routledge, 1995)

*Colonialism/Postcolonialism* by Ania Loomba,

*Postcolonial Theory: A Critical Introduction* by Leela Gandhi

*The Wretched of the Earth and Black Skins White Masks* by Frantz Fanon

*Frantz Fanon* (Routledge Critical Thinkers) by Pramod K. Nayar

*Orientalism* by Edward W Said

*Nation and Narration* and *The Location of Culture* by Homi K. Bhabha

*The Empire Writes Back* by Bill Ashcroft, Gareth Griffiths and Helen Tiffin

*In Other Worlds* by Gayatri Chakravorty Spivak *The Spivak Reader: Selected Works of Gayatri Chakravorty Spivak* by Gayatri Spivak (Author), Donna Landry (Editor), Gerald MacLean

## ELECTIVE COURSES (ONE OF THE FOLLOWING OPTIONS)

### Option A.

#### MEGC 3.4 A TRANSLATION I

The aim of this course is to introduce the students to the theory and practice of translation. The students are expected to acquire knowledge of various issues involving translation.

#### UNIT A

*Discussion on the following and related issues by referring to the texts mentioned* Translation, translation studies

Translation: Nature and types;  
Translation and transcreation

#### UNIT B

*Discussion on the following and related issues by referring to the texts mentioned*

Translation: approaches- linguistic (Nida, Jakobson) , cultural  
Translation: historical overview

Translation theory: introduction

#### UNIT C

*Discussion on the following and related issues by referring to the texts mentioned* Translation, Culture and Politics

Cultural and ideological issues in translation

#### Unit D

Notions of translatability, equivalence and problems involving equivalence

(The second part of the course will consist of the study of translations in relation to the original. For this purpose, works translated from the student's mother tongue, or from other languages known to him/her, will be studied alongside the originals.)

#### Textbooks

Munday ,Jeremy.(2001). *Introducing Translation Studies: theories and applications*. Routledge, London.

Bassnett, Susan. (2002). *Translation Studies*. Routledge, London.

#### Reference books

Baker, Mona, editor. (2010). *Critical Readings in Translation Studies*. Routledge, London and New York.

Benjamin, Walter. (1997). The Translator's Task. Trans.Rendall, Steven. *TTR: traduction, terminologie, redaction*, vol.10, no. 2, 151-165.

Bassnett, S. & A. Lefevre, editors. (1992). *Translation, History and Culture*. Princeton UP, Princeton.

Venuti, Lawrence. (2000). *The Translation Studies Reader*. Routledge, London and New York.

## Option B

**MEGC 3.4 B: Gender and Literature I** The aim of this course is to acquaint learners with basic concepts in gender relations in literature and to enable them to interrogate, analyse and formulate ideas drawing on feminist theory and methodology.

### Unit A

Gender as a critical tool: Understanding the historical context in North America and Europe and the rise of Feminisms (The course instructor will select a few essays from the following list for intensive study, the rest will be discussed in class).

Virginia Woolf: *A Room of One's Own* (Selections)

Simone de Beauvoir: *The Second Sex* (Selections) *Trans*

Toril Moi: *Sexual Textual Politics* (Selections) "Feminist, Female, Feminine" Gilbert and Gubar "Infection in the Sentence..." *Mad Woman in the Attic*.

Gayatri Chakravorty Spivak: "Three Women's Texts and a Critique of Imperialism"

Sigmund Freud: Selections

### Unit B (Any one)

Mary Shelly: *Frankenstein* (1818 Text)

Gustavo Flaubert: *Madame Bovary* *Trans*.

George Eliot: *Middlemarch/ The Mill on the Floss*

Virginia Woolf: *Orlando*

### Unit C

Tennyson: "The Lady of Shallot"

Elizabeth B. Browning: *Aurora Leigh* (Selections)

Christina Rossetti: "Goblin Market"

Emily Dickinson: "Publication is the Auction", "The Bible is an antique Volume", "Tell all the truth but tell it slant"

Michael Field (Katherine Bradley and Edith Cooper): "A girl", "Unbosoming", "It was deep April", "To Christina Rossetti"

### Unit D

Kate Chopin: "Desiree's Baby"

Charlotte Perkins Gilman: "The Yellow Wallpaper"

Katherine Mansfield: "The Doll's House"

### Textbooks

Blain, Virginia, editor. (2009). *Victorian Women Poets: An Annotated Anthology*. Longman Annotated Texts.

de Beauvoir, Simone. (1949). *The Second Sex*. *Trans*. and Ed. H. M. Parshley, Vintage. 1997 edition.

Moi, Toril. (2002). *Sexual/Textual Politics: Feminist Literary Theory*. Routledge, New Accents.

Shelly, Mary. (2001). *Frankenstein*. Ed. Anjana Sarma. Oxford UP, New Delhi.

### Reference Books

Warhol, [Robyn R.](#) and [Diane Price Herndl.](#) editors. (1997). *Feminisms: An Anthology of Literary Theory and Criticism*.

Zilboorg, Caroline. (2004). *Women's Writing: Past and Present*. Cambridge University Press, Cambridge University Press, Cambridge.

## Option C

### MEGC 3.4 C: American Literature I

The aim of this course is to introduce the student to the American difference in literature. Students are expected to be aware of the early colonial experience, the Puritanical setup, the struggle for survival and later for political and cultural independence, the search for an American voice, the increasingly multiethnic setup and the faith in an American mythology of origins. This Course will be covered through both historical study and textual analysis.

#### Unit A

The Colonial Period (Declaration of American Independence, 1776)

American Nationalism, Romanticism, Transcendentalism (Selections from Emerson) Washington Irving: *Legends of Sleepy Hollow*/ Poe: one story

The American Civil War: Slavery, Abolitionism, Reconstruction, Regionalism

#### Unit B

##### Drama

Arthur Miller: *The Crucible*/ Edward Albee: *Who's Afraid of Virginia Woolf?*

August Wilson: *Fences*

#### Unit C

##### Critiquing American mythologies

Nathaniel Hawthorne, *The Scarlet Letter*, Norton Edition

Herman Melville, *Moby Dick*. Norton Edition

Leslie Morman Silko: *Ceremony* Penguin edition

#### Unit D

##### Poetry: Modern American Poets

Walt Whitman: Song of Myself (Selections)

Emily Dickinson: Selections

Wallace Stevens: "Peter Quince at the Clavier," "A High-Toned Old Christian Woman,"

Ezra Pound: "A Pact," "The Return," "Histrion", "Epilogue"

Robert Frost: "Once by the Pacific," "Home Burial," "Out, Out" "The West-Running Brook"

Langston Hughes: Selections

##### Textbooks

Ellmann, Richard, editor. (2001). *The New Oxford Book of American Verse*. Oxford University Press, New York.

Horton, R W and H E Edwards, editors. (1974). *Backgrounds of American Literary Thought*.

Prentice Hall, Englewood Cliffs, NJ.

##### References

Spiller, Robert E. (1961). *The Cycle of American Literature*. Macmillan, New York.

Gray, Richard. (2008). *History of American Literature*. Blackwell, Oxford.

Chase, Richard. (1990). *The American Novel and its Tradition*. Johns Hopkins Press, Baltimore.

Krasner, David. editor. (2005). *A Companion to Twentieth Century American Drama*.

Blackwell, Oxford.

## Option D

### MEGC 3.4 D: Indian Writing in English- I

#### Unit A

Will discuss the first phase of pre-independence Indian poetry known as the period of literary renaissance in India. ‘

**Background Topics:** The poetry of Henry Derozio, Kashi Prasad Ghosh, Aurobindo, Manmohan Ghosh, Sarojini Naidu.

#### Text for detailed discussion:

Toru Dutt: The Lotus, Baumaree, Our Old Casuarina Tree

Rabindranath Tagore: Songs from Gitanjali (I; XI; XXXV, LXXIV)

#### Unit B

The novel as a literary phenomenon will be studied in this unit. This unit will also deal with novels reflecting the social problems with special reference to Mulk Raj Anand.

**Background Topics:** Contribution of Bankim Chandra, Bhabani Bhattacharya, Manohar Malgaonkar, G.V.Desani.

#### Text for detailed discussion

Mulk Raj Anand: *Untouchable*

#### Unit C

This unit will focus on the works of pre-independence Indian English Writer

**Background Topics:** Gandhian influence and the progressive writers movement, Contribution of R.K Narayan, KA Abbas“, Dhan Gopal Mukherjee. Arun Joshi.

#### Text for detailed discussion:

Raja Rao : *Kanthapura*

#### Unit D

Will concentrate its focus on the issue of the partition

**Background Topics:** Nayantara Sahgal, Kamla Markandaya, RP Jhabwala, Chaman Nahal, Partition literature

#### Text for detailed discussion:

Khushwant Singh: *Train to Pakistan*

#### Reference Books Recommended:

1. Poems of Rabindranath Tagore, UBS publishers , New Delhi.
2. *Rabindranath Tagore and the Nation* by Swati Ganguli. Punaschat Publisher, 2012
3. *Gitanjali*. Embassy book, 2011
4. Arun Joshi: *A Critical Study* by S.K. Mittal, Omega Publication, 2011.
5. Anita Desai: *A Critical Study* by A. Das, Omega Publication, 2011
8. Makarand Paranjpe, *Indian Poetry in English*,(Madras: Macmillan, 1993)

## Option E

### MEGC 3.4 E: ELT I

The aim of the course is to enable the students to develop critical awareness of different philosophies of language learning and language teaching. The course is expected to familiarize the students with the principles and practice of the ELT curriculum, syllabus design, classroom teaching and assessment and help them to enhance their language abilities

#### Unit A

Language policy reforms in India: Changing roles of English and Indian Languages

#### Unit B

History of English language teaching/historical perspectives on language pedagogy

English as International/ Global Language-implications for teaching and learning

Problematizing the 'Native speaker'

#### Unit C

English language education in bilingual/multilingual contexts (India/Northeast) Innovation and changes in English language education: contexts and issues

#### Unit D

Study on curriculum problems, approaches, beliefs and issues Syllabus Design: Concepts/issues Materials Development in Indian Multilingual Contexts

#### Textbooks

(Selected portions)

Brown, H.D.(2006). *Principles of Language Learning and Teaching*. Longman, New York. Denise E. Murray and MaryAnn Christison. (2011). *Understanding innovation in English*

*language education: Contexts and issues*. Routledge, London.

Gass, Susan M. and Selinker, Larry. (2001). *Second Language Acquisition: An Introductory Course*. Routledge, London.

Heugh, Kathleen & Tove Skutnaab-Kangas .(2010). *Multilingual Education Works: From the Periphery to the Centre*. Orient Longman, New Delhi.

Mohanty, A.K., Panda, M., Phillipson, R. & Skutnabb-Kangas, T., editors. (2009). *Multilingual Education for Social Justice: Globalising the Local*. Orient Longman, New Delhi.

#### Reference books

Agnihotry, R.K., and Khanna, editors. (1995). *English Language Teaching in India*. Sage, New Delhi.

Nunan, D. (1994). *Syllabus Design*. OUP, Oxford.

Nunan, D.(2004). *Task-based Language Teaching*. Cambridge University Press, Cambridge. Pennycook, A.

(1994). *The Cultural Politics of English as an International Language*. Longman, London.

Phillipson, R. (1992). *Linguistic Imperialism*. Oxford University Press, Oxford.

Stern, H.H. (1983). *Fundamental Concepts of Language Teaching*. OUP, Oxford.

Vyas, M.A. and Patel, Y.L. editors. (2009). *Teaching English as a Second Language: A New Pedagogy for a New Century*. Prentice-Hall India, New Delhi.

## SEMESTER IV

### MEGC 4.1: Modern Poetry

This course in Poetry will address issues of Modernism as a literary movement and critical sensibility. It will draw upon the contentions of Yeats, Pound and Eliot on the changes initiated in writing by the movement to meet the requirements of the time.

#### UNIT A

Yeats: “Adam's Curse,” “The Tower,” “Scholars”; Byzantium poems and “The Dialogue of Self and Soul”

#### Unit B

Eliot: *The Waste Land*

#### Unit C

Owen: “Exposure,” “Strange Meeting,” “Dulce et Decorum Est”

Auden: “Consider this and in our Time,” “In Memory of WB Yeats”

#### Unit D

Larkin: “Ambulances,” “Poetry of Departures,” “Church Going”

Ted Hughes: “Hawk Roosting,” “Wind,” “Thrushes”

Sylvia Plath: “Poem for a Birthday”

Heaney: “Digging,” “The Harvest Bow,” “Death of a Naturalist”

Stevie Smith: “Pretty”

Carol Ann Duffy: “Mrs. Lazarus,” “Head of English”

#### Textbooks:

Roberts, Michael and Peter Porter, editors. (2002). *The Faber Book of Modern Verse*. Faber, London, Fourth Edition.

Schmidt, Michael, editor.(2000). *The Harvill Book of Twentieth Century Poetry in English*.

Rupa, New Delhi.

Wain, John. (1990). *The Oxford Anthology of English Poetry (From Blake to Heaney)*. OUP, Oxford

#### Reference Books:

Corcoran, Neil, editor. (2007). *The Cambridge Companion to the Twentieth Century English Poetry*. Cambridge University Press, Cambridge.



## **MEGC 4.2: MODERN PROSE**

This course aims at introducing students to different types of prose written by major writers of the twentieth century and creating in them an appreciation of the expressive possibilities of the English language.

### **Unit A**

E.M. Forster: Selections from *Abinger Harvest*

B. Russell: “How to Escape from Intellectual Rubbish” (from the *Unpopular Essays*) George Orwell, “Shooting an Elephant”, “Politics and the English Language”, “A Hanging”

Toni Morrison, “Whiteness and the Literary Imagination”

### **Unit B**

Edward Said, from *Orientalism*

Salman Rushdie, from *Imaginary Homelands*

### **Unit C**

Kamala Das, from *My Story*

Amitav Ghosh, “The Imam and the Indian”

### **Unit D**

Virginia Woolf, from *A Room of One's Own* (Shakespeare's Sister)

### **Text book**

Selections mentioned above will be provided by the Department.

### **Reference Books**

Walder, Denis, editor. (2008). *Literature and the Modern World*. OUP, Oxford

## MEGC 4.3: Postcolonialism and Literature- II

### Unit A

**Background Study:** Decolonizing the Mind, Language and Imperialism, Language Exists as Culture, Neocolonialism

**Text for Detailed Study:**

*Devil on the Cross* by Ngugiwa Thiong'o

*Disgrace* by JM Coetzee

### Unit B

**Background Study:** Latin American Literature, Caribbean literature, Creole and pidgeon, Magical realism, "Commonwealth" literature

**Text for Detailed Study:**

*The Mimic Man* by V. S. Naipaul

*Wild Sargasso Sea* by Jean Rhys

### Unit C

**Background Study:** Gandhi *Hind Swaraj*, Ambedkar *The Anihilation of Caste*, G N Devy *After Amnesia*, Balchandra Nemade: Nativism

**Text for Detailed Study:**

*The God of Small Things* by Arundhati Roy

### Unit D

**Background Study:** Globalization, Transnationalism, Cosmopolitanism, Neo-imperialism

**Text for Detailed Study:**

*The Inheritance of Loss* by Kiran Desai

### Reference Books Recommended

Ahmad, Aijaz. *In Theory: Classes, Nations, Literatures*. New York and London: Verso, 1995.

Hardt, Michael, and Antonio Negri. *Empire*. Cambridge: Harvard University Press, 2000.

Parry, Benita. "Problems in Current Theories of Colonial Discourse." *Oxford Literary Review* 9.1-2 (1987): 27-58.

Spivak, Gayatri Chakravorty. "Transnationality and Multiculturalist Ideology: Interview with Gayatri Chakravorty Spivak." *Between the Lines: South Asians and Postcoloniality*. Eds. Deepika Bahri and Mary Vasudeva. Philadelphia: Temple University Press, 1996. 64-92.

Rao, Nagesh. "'Neocolonialism' or Globalization? Postcolonial Theory and the Demands of Political Economy." *Interdisciplinary Literary Studies* 1.2 (Spring 2000) 165-84.

## **ELECTIVE COURSES (one of the following options)**

### **MEGC 4.4 A: TRANSLATION: THEORY AND PRACTICE II**

This course shall follow the earlier course in translation. The aim of this course is to acquaint the students with the methods and techniques of translation and enable them to take up translation of literary and non-literary texts.

#### **UNIT A**

*Discussion on the following and related issues by referring to the texts mentioned*

Translation theory: further developments

Translation: methods, techniques and strategies

#### **UNIT B**

*Discussion on the following and related issues by referring to the texts mentioned* The process of translation

Units of translation

Adequacy of translation: adequate, relevant translation

#### **UNIT C**

*Discussion on the following and related issues by referring to the texts mentioned*

Characteristics of literary translation and knowledge translation

Problems of literary and knowledge translations

Universals of translation

#### **UNIT D**

Practice in translation of literary and non-literary texts

Critique of select translated works

#### **Textbooks**

Munday, Jeremy. (2001) *Introducing Translation Studies: theories and applications*. Routledge, London.

Bassnett, Susan. (2002). *Translation Studies*. Routledge, London.

#### **Reference books**

Baker, Mona, editor. (2010). *Critical Readings in Translation Studies*. Routledge, London and New York.

Bassnett, S. and A. Lefevre, editors. (1992). *Translation, History and Culture*. Princeton UP, Princeton.

Venuti, Lawrence. (2004). *The Translation Studies Reader*. Routledge, London and New York.

## MEGC 4.4 B: Gender and Literature II

This course is a continuation of the course on Gender and Literature introduced earlier. The focus of this course shall be on the application of the theoretical knowledge in responding to texts chosen for intensive study.

### UNIT A

Issues and Debates in Feminisms: Outside of the West (The course instructor will select a few essays from the following list for intensive study; the rest will be discussed in class).

Helene Cixous: "The Laugh of the Medusa". Trans. Judith Butler: Selections from *Gender Trouble* Eve Sedgwick: Selections from *Epistemology of the Closet* Chandra Mohanty. *Under Western Eyes*.  
Selections Lila Abu-Lughod: Introduction. *Remaking Women*. Tharu and Lalita. Introduction. *Women Writing in India* R.W. Connell: "The Science of Masculinities" Audre' Lorde: "Age, Race, Class, and Sex: Women Redefining Difference" Ecofeminism (Selection of essays)

### UNIT B

Amy Lowell: "A Japanese Wood-Carving", "A Ballad of Footmen", "A Winter Ride". Adrienne Rich: "Aunt Jennifer's Tigers", "Dreamwood", "Planetarium". Kamala Das: "The Dance of the Eunuchs", "An Introduction" Temsula Ao: "The Edge"

### UNIT C

Ismat Chughtai: "The Quilt". Indira Goswami: "The Sin". Mahasweta Devi: "Breastgiver". Ama Ata Aidoo: "Something to Talk about on the Way to the Funeral". Mamang Dai: Selections from *Legends of Pensam*.  
Manjula Padmanaabhan: "Stains". Hisaye Yamamoto: "Seventeen Syllables" from *Seventeen Syllables and other Stories*

### UNIT D (any two)

Sylvia Plath *The Bell Jar*. Alice Walker *The Color Purple*. Nadine Gordimer *Burger's Daughter*.  
Toni Morrison *Beloved/Sula*. Lorraine Hansberry: *A Raisin in the Sun*. Rabindranath Tagore. *Char Adhyay*. Trans.

### Textbooks

[Bradshaw](#), Melissa and [Adrienne Munich](#), editors. (2002). *Selected Poems of Amy Lowell*. Rutgers UP.  
Hansberry, Lorraine. (2004). *A Raisin in the Sun*. Vintage.  
Warhol, [Robyn R.](#) and [Diane Price Herndl.](#), editors. (1997). *Feminisms: An Anthology of Literary Theory and Criticism. Manushi (relevant back numbers)*

### Reference books

Bloom, Harold. (2009). *A Raisin in the Sun (Bloom's Guides)*. Chelsea House, 1st Edition. Bloom, Harold. (2006). *Frankenstein: Mary Wollstonecraft Shelley*. Chelsea House, Revised Edition.  
Bristow, Joseph, editor. (1995). *Victorian Women Poets: Emily Bronte, Elizabeth Barrett Browning, Christina Rossetti*. New Casebooks.  
Homans, Margaret. (1992). *Virginia Woolf: A Collection of Critical Essays*. Prentice-Hall, New Delhi.  
Zilboorg, Caroline. (2004). *Women's Writing: Past and Present*. Cambridge University Press, Cambridge University Press, Cambridge.

## Option C

### MEGC 4.4 C: American Literature II

This Course is continuation of the earlier Course in American literature. The aim of this Course is to introduce the student to developments in the field not covered earlier. There are sections on American Travel Writing and Life Writing as well as major works of fiction. This Course seeks to cover the identified texts through in depth study.

#### Unit A

William Faulkner: *The Sound and the Fury/ Light in August*, Norton edition Saul Bellow: *Humboldt's Gift /Henderson the Rain King*, Penguin-Viking edition

#### Unit B

Toni Morrison: *Paradise/ Beloved/Tar Baby*, Vintage edition.

#### Unit C Travel Writing

Maya Angelou: *All God's Children Need Travelling Shoes* , Vintage edition.

Or

Richard Wright: *Pagan Spain*, Harper Collins edition

#### Unit D Life Writing

Booker T Washington: *Up from Slavery*, Norton Edition / Barack Obama: *Dreams from My Father*, Crown, New York

Or

Gloria E. Anzaldua: *Borderlands/La Frontera*, in *The Gloria Anzaldua Reader*, Duke UP /Amy Tan: *Half and Half* Viking edition /Maxine Hong Kingston: *The Woman Warrior*, Vintage edi

#### Reference books

Andrews, William L., Frances Smith Forster and Trudier Harris. editors.(2001). *The Concise Oxford Companion to African American Literature*. Oxford University Press, New York. Buell, Lawrence. (2014). *The Dream of the Great American Novel*. Harvard UP, Cambridge,Mass.

Mostern, Kenneth. (2004). *Autobiography and Black Identity Politics*. Cambridge UP, Cambridge and New York.

Porter, Joy and Kenneth M. Roemer. editors. (2005). *The Cambridge Companion To Native American Literature*. Cambridge UP, Cambridge and New York.

## Option D

### MEGC 4.4 D: INDIAN WRITING IN ENGLISH II

The aim of the course is to carry further the stated aims of Indian Writing in English I. It also aims to broaden the student's perception of Indian Writing in English through a study of areas outside the scope of the earlier course.

#### UNIT A: Poetry

Eunice de Souza: "Catholic Mother", "de Souza Prabhu", "Eunice", "Feeding the Poor at Christmas"  
Keki Daruwalla: "The Epileptic", "The Ghagra in Spate", "Death of a Bird"

Arvind Kolatkar: *Jejuri* (selections)

Aga Shahid Ali: "Postcard from Kashmir", "Snowmen", "Cracked Portraits", "The Previous Occupant"

Sujata Bhatt: (Selections)

#### UNIT B: The Northeast (Poetry and Fiction)

Robin Ngangom: "A Poem for Mother," "Native Land"

Desmond Kharmawplang: "The Conquest", "Letter to a Dear Friend"

Kynpham Sing Nongkynrih: "When the Prime Minister Visits Shillong the Bamboos Watch in Silence"  
"Lines Written to Mothers Who Disagree with Their Sons' Choices of Women"

Siddhartha Deb: *The Point of Return*, Harper Collins/ *Surface*

Mitra Phukan: *The Collector's Wife*

#### UNIT C: Problematics of IWE

Ahmed Ali: *Twilight in Delhi*, Rupa / Romesh Guneseckara, *Reef*, Granta Books

Jhumpa Lahiri: *The Interpreter of Maladies*, Harper Collins / M G Vassanji: *The In-Between World of Vikram Lall*, Doublday Canada

#### UNIT D: Non-fictional Prose

Amit Chaudhuri: Selections from *Clearing a Space*, Penguin

A. K. Ramanujan: "Three Hundred Ramayanas" OUP

#### Textbooks

King, Bruce, editor. (2005). *Modern Indian Poetry in English*. OUP, New Delhi.

#### Reference Books

Patke, Rajeev (2003). *Postcolonial Poetry in English*. OUP, Oxford.

Mukherjee, Meenakshi. (2002). *The Perishable Empire: Essays on Indian Writing in English*.

OUP, Delhi.

## **Option E**

### **MEGC 4.4 E: ELT II**

This course is a continuation of the course on ELT introduced earlier. The focus of this course shall be on the application of the theoretical knowledge and the skills acquired by the students in the previous semester.

#### **UNIT A**

Learner autonomy, authentic materials and language instruction

Language classroom: utilizing the diversity

#### **UNIT B**

Role of literature in the language classroom: Issues and options

Exploring representative literary texts for the study of various forms: prose, poetry, drama

#### **UNIT C**

Role of ELT in changing contexts

English for specific/academic purposes

#### **UNIT D**

Role of LI in ESL Classroom

Academic Reading and Writing

Introduction to Research in ELE

#### **Textbooks**

Belcher, Diane D., editor. (2009). *English for Specific Purposes in Theory and Practice*. University of Michigan Press, Michigan.

Brown, H.D. (2006). *Principles of Language Learning and Teaching*. Longman, New York. Tollefson, James W., editor. (2002) *Language Policies in Education: Critical Issues*. Mahwah, New Jersey: Lawrence Erlbaum Associates.

Tudor, Ian. (2001). *The Dynamics of the Language Classroom*. Cambridge University Press, Cambridge.

Widdowson, H.G. (1990). *Aspects of Language Teaching*. Oxford University Press, Oxford.

#### **Reference books**

Beatty, K. (2003). *Teaching and Researching Computer-Assisted Language Learning*. Pearson Education, London.

Fotos, S. and Brown, C. editors. (2004). *New Perspectives on CALL for Second and Foreign Language Classroom*. Lawrence Erlbaum Associates, Mahwah, NJ.

Mohanty, A.K., Panda, M., Phillipson, R. & Skutnabb-Kangas, T. editors. (2009). *Multilingual Education for Social Justice: Globalising the Local*. Orient Longman, New Delhi.

Phillipson, Robert. (2003). *English-Only Europe? Challenging Language Policy*. Routledge, London. Tollefson James W., editor. (2002). *Language Policies in Education: Critical Issues*. Mahwah, New Jersey: Lawrence Erlbaum Associates.

Vyas, M.A. and Patel, Y.L. editors. (2009). *Teaching English as a Second Language: A New Pedagogy for a New Century*. Prentice-Hall India, New Delhi.

## CBCT (Choice Based Credit Transfer)

### MEGT 1.5: Literature and Film-I

**Objective:** The objective of this course is to provide a basic introduction to the students about the profound interrelation between literature and films as mediums of art. The course explores the praxis of film adaptation based on a few canonical literary texts. It has been designed to familiarise the learners with the philosophy, style and technique/s of adaptation; how the same work of art can be represented in other mediums, how adaptations can be at once translation, creation as well as commentary with respect to the original text.

#### Unit A

1. **How to Read a Film:** James Monaco (“Film and the Novel”, “Film and Theater”, “The Language of Film: Signs and Syntax”)
2. **Speaking of Films:** Satyajit Ray translated by Gopa Majumdar (“The Making of a Film: Structure, Language and Style”)
3. **A Theory of Adaptation:** Linda Hutcheon and Siobhan O'flynn (“Beginning to Theorize Adaptation”)

#### Unit B

Text: William Shakespeare, *Romeo and Juliet*

Films:

*West Side Story*, 1961, Robert Wise and Jerome Robbins

*Romeo and Juliet*, 1968, Franco Zeffirelli

*Romeo + Juliet*, 1996, Baz Luhrmann

#### Unit C

Text: *Pather Panchali: Song of the Road* translated by T. W. Clark and Tarapada Mukherji

Film:

*Pather Panchali*, 1955, Satyajit Ray

*Aparajito*, 1956, Satyajit Ray

*Apur Sansar*, 1959, Satyajit Ray

#### Unit D

Text: Jane Austen, *Pride and Prejudice*

Film:

*Pride and Prejudice*, 1995, BBC Miniseries.

*Bride and Prejudice*, 2004, Gurinder Chaddha

*Pride and Prejudice*, 2005, Joe Wright

Text: Mario Puzzo, *The Godfather*

Film:

*The Godfather*, 1972, Francis Ford Coppola

*The Godfather, Part II*, 1974, Francis Ford Coppola

*The Godfather, Part III*, 1990, Francis Ford Coppola

*Sarkar*, 2005, Ram Gopal Verma

#### Essential Reading:

Dix, Andrew. *Beginning Film Studies*. Manchester University Press: 2008

Wood, Michael. *Film; A Very Short Introduction*. OUP: 2012

Bone, Jan and Ron Johnson. *Understanding the Film: An Introduction to Film Appreciation*. McGraw-Hill Contemporary: 1992

Hutcheon, Linda and Siobhan O'flynn. *A Theory of Adaptation*. Routledge: 2006

Ray, Satyajit. *Deep Focus*. Harper: 2013

Ray, Satyajit. *Speaking of Films*. Penguin: 2005

Monaco, James. *How to Read a Film*. OUP: 2009



## MEGT 2.5: Literature and Film-II

### Unit A

Will deal with Filmography i.e. the origins and history of films as a genre from its beginnings to its development introducing students to major directors. Beginning with the Lumiere brothers students will be familiarized with a few landmark directors.

**Topics for Background:** The Lumiere Brothers, The Silent era, Charlie Chaplin's *The Gold Rush* (1925), Bergman's *Seventh Seal* (1956)

#### Topics for detailed study:

The evolution of films as a genre. The contribution of major film makers like Charlie Chaplin, Hitchcock and Bergman and how their films reflected their times.

### Unit B

Will deal with a brief overview of film theory and semiotics.

**Topics for Background :** Montage, Point of view, Bazin and mise-en-scene, Godard and the slow tracking shot, Auteur Theory, Cinema noire

#### Topics for detailed study:

Impact of structuralism on film theory, Psychoanalysis and film; Feminist film theory.

### Unit C

This Unit will have a brief overview of Indian cinema from Dadasaheb Phalke to, Art cinema and Bollywood mainstream cinema.

**Topics for Background:** Mythological films, Gangster films, Masala, Bollywood melodrama, Art cinema, the Angry Young Man

Topics and Texts for detailed Study:

Origins and development of Indian Cinema, Regional Cinema, Parallel Cinema, Masala Films, Avant Garde Indian Films, Popular Films, Film Reception and the Box Office

Films: *Harishchandrachi Factory*, *Pyasa*, *Pather Panchali*, *Sholay*

### Unit D

This unit will deal with the relationship between literary texts and adaptations.

**Background Topics:** Adaptation as interpretation, Vishal Bharadwaj and Shakespeare, Bapsi Sidhwa's *Ice Candy Man* and *Earth*,

#### Topics for detailed study

Shakespearean adaptations: Kurosawa's adaptations of *Macbeth* and *King Lear* (*The Throne of Blood* and *Ran*); Shakespearean interpretations in Bollywood- Vishal Bharadwaj's *Omkara*, *Maqbool* and *Haider* etc.

#### Reference Books Recommended for Further Reading:

Mast, Gerald & Bruce F Kavin, *A Short History of the Movies*, Longman

R. Vasudevan. *Making Meaning in Indian Cinema*

Stam, Robert "Introduction: The Theory and Practice of Adaptation" in *Literature & Film* eds Robert S. Ray. *Our Films their Films* \_\_\_\_\_, *What Ails Indian Filmmaking*  
Shubha Mishra, Urmila Dabir (eds.) *Word and Image: Articulation on Literature and Films* (Nagpur: Dattsons)

### **MEGT 3.5: Literature of Northeast India-I**

#### **UNIT A Poetry-I**

Selections from Tilottama Mishra: *The Oxford Anthology of Writings from North-East India: Poetry and Essays*  
Selections from *The Dancing Earth*

#### **UNIT B Fiction-I**

Mitra Phukan: *The Collector's Wife*  
Birendra Kr. Bhattacharyya: *Iyaruigam*  
Esterine Kire: *A Terrible Matriarchy*

#### **UNIT C Short Stories**

Selections from Temsula Ao: *These Hills Called Home*  
Selections from *The Heart of the Matter* (Katha)  
Selections from Tilottama Mishra: *The Oxford Anthology of Writings from North-East India: Fiction*

#### **UNIT D Non-Fiction**

Selections from Sanjoy Hazarika: *Writing on the Wall/ Strangers of the Mist*  
Selections from Udayan Mishra: *The Periphery Strikes Back*

### **MEGT 4.5: Literature of Northeast India-II**

#### **UNIT A Critical Writings**

Selections from Preeti Gill: *The Peripheral Centre* Selections from Preeti Gill & Samrat, *Insider Outsider: Belonging and Unbelonging in Northeast India*

#### **UNIT B Poetry-II**

Selections from Preeti Gill & Samrat, *Insider Outsider: Belonging and Unbelonging in Northeast India* (Poems by R.G Lyngdoh)  
Selections from *The Dancing Earth*

#### **UNIT C Fiction-II**

Malsawmi Jacob: *Zorami*  
Rita Choudhury: *Chinatown Days*  
Mamang Dai: *Legends of Pensam*

#### **UNIT D Background Reading**

Selections from Parismita Singh's *Centrepiece: New Writings and Art from Northeast India*  
Selections from Tilottama Mishra: *The Oxford Anthology of Writings from North-East India: Poetry and Essays*

**St. Joseph's College (Autonomous)**  
Jakhama, Kohima, Nagaland

Choice Based Credit System Syllabus  
for M.A in Political Science

## **Post Graduate Course in Political Science**

### **Objectives**

- To equip the students with knowledge of basic principles, ideas, themes and concepts of the subject.
- To impart specialized knowledge in certain specific areas.
- To develop the analytical abilities of the students that will help to make sense of the changes taking place.
- To develop interdisciplinary outlook and comprehensive understanding among the learners about political realities.
- To enable the students prepared for various competitive examinations.
- To enable students seek a career in teaching.
- To inculcate research and analytical habit among the learners.
- To enable students undergo additional courses, acquire more credits than what is required.

### **PATTERN OF NEW COURSE**

1. The new syllabus is designed as per the Semester Pattern with Continuous Internal Evaluation (CIE) schema.
2. The entire course is full time of Two Academic -Year duration consisting of four semesters.
3. Each semester will have 05(five) papers and the entire course requirement is of 20 papers, divided evenly to all the semesters, for the successful completion of the M.A. programme.
4. The papers are divided into Core, Elective, and Choice Based Credit Transfer (CBCT).
5. The M.A. programme is designed as Choice Based Credit System (CBCS).
6. Each Semesters I and II, consist of Core and CBCT carries a of total 19 credits (each Core paper will consist of 4 credits and CBCT 3 Credits) and Semesters III and IV consists of Core, Electives and CBCT papers (each core and Elective papers have 4 credits and CBCT 3 credits).
7. The system is based upon continuous internal evaluation having a written and descriptive examination of 70 marks and internal evaluation of 30 marks for each paper.

### **COURSES:**

The PG Programme in Political Science consists of the following courses that are offered to the students.

- 1. Core: Consists of the Compulsory papers offered in all the four semesters which are core to the discipline of political science. The students admitted in the department have to compulsorily appear in these papers. (These papers are not for offer to the other discipline students)
- 2. Elective: The elective papers are for the students admitted in the department only. It consists of papers to provide an opportunity to the students to select from the pool of papers so as to enable her/him to carry out specializations. (students from other disciplines cannot offer these papers)
- 3. Choice based Credit Transfer (CBCT): The papers offered in the CBCT courses are for the students of other disciplines only.

## Curriculum Scheme

### Semester -1

Paper I, II, III and IV

- Core

Paper V

- CBCT

### Semester II:

Paper I, II, III and IV

- Core

Paper V

- CBCT

### Semester III

Paper I, II and III

- Core

Paper IV

- Elective

Paper V

- CBCT

### Semester IV

Paper I, II and III

- Core

Paper IV

- Elective

Paper V

- CBCT

**(Outline of the Course in Semester Wise)**

**M.A. I  
SEMESTER - I**

**Core:**

**MPSC 1.1** – Modern Indian Political Thinkers

**MPSC 1.2** – International Relations

**MPSC 1.3** – Modern Political Ideologies

**MPSC 1.4** – Indian Government and Politics

**Choice Based Credit Transfer (CBCT)- I**

**(To be opted from other Disciplines)**

**SEMESTER - II**

**Core:**

**MPSC 2.1** – Western Political Thought

**MPSC 2.2**– Contemporary Political Issues

**MPSC 2.3** - Comparative Politics

**MPSC 2.4** - Political Sociology

**CBCT - II**

**(To be opted from other Disciplines)**

**SEMESTER - III**

**MPSC 3.1** – Public Administration

**MPSC 3.2** – Foundation of Social Science Research

**MPSC 3.3** – India and the World

**ELECTIVES**

**(Choose any one from the following elective papers)**

**MPSC 3.4 A** – International Law

**MPSC 3.4 B** – Modern Political Analysis

**MPSC 3.4 C** – Politics of Developing Countries

**MPSC 3.4 D** –Women and Politics

**CBCT – III (To be opted from other disciplines).**

## SEMESTER - IV

### Core

MPSC 4.1 - State Politics in India

MPSC 4.2 – Indian Administration

MPSC 4.3 – Globalization and its Impact in India

### Elective II

**(Choose any one from the following elective papers)**

MPSC 4.4 A – Human Rights: Theory and Practice

MPSC 4.4 B – Institutions and Processes in North East India

MPSC 4.4 C – International Organization

**CBCT.**

**(To be chosen from other discipline)**

### Choice Based Credit Transfer (CBCT)

**(To be opted by students of disciplines other than Political Science)**

MPST 1.5 – Human Rights and Indian Constitution

MPST 2.5 – Political Science: Ideas and Concepts

MPST 3.5 – Indian Constitution and its Working

MPST 4.5 – Pressure Groups and Social Movement



## MA. Political Science (Honours)

Semester	Course Code	Course Name	Credits
First	MPSC 1.1	Modern Indian Political Thinkers	4
	MPSC 1.2	International Relations	4
	MPSC 1.3	Modern Political Ideologies	4
	MPSC 1.4	Indian Government and Politics	4
	MPST 1.5	Human Rights and Indian Constitution	3
Second	MPSC 2.1	Western Political Thought	4
	MPSC 2.2	Contemporary Political Issues	4
	MPSC 2.3	Comparative Politics	4
	MPSC 2.4	Political Sociology	4
	MPST 2.5	Political Science: Ideas and Concepts	3
Third	MPSC 3.1	Public Administration	4
	MPSC 3.2	Foundation of Social Science Research	4
	MPSC 3.3	India and the World	4
	MPSC 3.4A	International Law	4
	MPSC 3.4B	Modern Political Analysis	
	MPSC 3.4C	Politics of Developing Countries	
	MPSC 3.4D	Women and Politics	
MPST 3.5	Indian Constitution and its Working	3	
Fourth	MPSC 4.1	State Politics in India	4
	MPSC 4.2	Indian Administration	4
	MPSC 4.3	Globalization and its Impact in India	4
	MPSC 4.4A	Human Rights: Theory and Practice	4
	MPSC 4.4B	Institutions and Processes in North East India	
	MPSC 4.4C	International Organization	
	MPST 4.5	Pressure Groups and Social Movement	3
Total No. of Credits			76

## Core Course

### SEMESTER - I

#### MPSC 1.1: Modern Indian Political Thinkers

##### Unit 1:

**Raja Rammohan Roy** - Theory of Personal and Political Freedom, Roy's Ideas on Educational, Economic and Political issues, As a Progressive and Liberal Thinker, Subjects of Law and Morality.

**Dr.B.R. Ambedkar** - Movement against Class Discrimination; Framed the Constitution of India; Support to Uniform Civil Code, Economic Planning.

##### Unit 2.

**Maulana Abul Kalam Azad** - Azad's Views on Hindu-Muslim Unity, Views on Nationalism, Views on Non-Violence, Azad's Views on Partition of India.

**Acharya Vinoba Bhave** - Religious and Social work; Bhoo-dan Movement; Bhave and Gandhi.

##### Unit 3.

**M.K.Gandhi** - Satyagraha- Scope and Significance; Gandhian perspective on Peace; Gandhian perspective of the nature of the State

**Jawaharlal Nehru** - Nehru's Views on Nationalism, Nehru on Democracy, Nehru's Modernism, Nehru's Views on Internationalism

##### Unit 4:

**M.N. Roy** - M.N. Roy and the Communist Movement; Humanist Ideology; Roy's Materialism; Radical Humanism; Party less Democracy

**J.P. Narayan** - Influence of Marxism; Impact of Gandhian thoughts: A shift from Socialism to Sarvodaya; Total Revolution

##### Unit 5:

**Ram Manohar Lohia** - Lohia's Ideas on Socialism and Gandhism; Lohia's Concept of International Society

**Amartya Sen** - Development as Freedom; Missing Women.

#### Books recommended

1. Indian Political Thought – Ram Ratan & Ruchi Tyagi
2. Modern Indian Political Thought – V. P. Verma
3. A.Appadoria (1970) Document on Political Thought in Modern India. Vol.2, Bombay, Oxford Univ.Press
4. A.R Desai (1954) The Social Background of Indian Nationalism, Bombay popular
5. Bandhopandhyaya. J (1969) Social and Political; thought of Gandhi, Bombay, Allied.
6. B.K Nanda (1974) Gokhale, Gandhi and the nature studies in Indian Nationalism, London, Allen & Unwin.
7. B.S Sharma(1962) The Political philosophy of M.N Roy, Delhi, National Publications House, 1919, A Wolpert, Tilak and Gokhale, Berkeley Univ. of California, press .
8. D.G Karve & D.V(1966) Ambedkar, Speeches and writings of Gopal Krishna Gokhale, Bombay, Asia Publishing House.
9. D.P Roy (1989) Leftist Politics in India: M, N Roy and the Radical Democratic party, Calcutta Minerua.
10. J.V Bondurant (1965) Conquest of Violence, The Gandhian Philosophy of conflict, Berkeley, Univ. of California Press.
11. K. Damodaran (1976) Indian Thought: A Critical Survey, London, Asian Publications House.
12. K.N Kadam (1992) (ed) Dr.B.R Ambedkar, New Delhi, Sage
13. M.J Kanetkar (1935) Tilak and Gandhi: A Comparative Study, Nagpur.

14. N.R(1975) (ed) Raja Rammohan Roy: A Bi-centenary, Calcutta, Asiatic Society.
15. R.J Casliman (1975) The Myth of Lokmanya Tilak and Mass Politics in Mahashtra, Berkeley Univ. of California Press.
16. R. Iyer (1973) The Moral and Political Thought of Mahatma Gandhi, Delhi, Oxford University Press
17. S.Gosh(1973) The Renaissance to Militant nationalism, Bombay Allied Publishers.
18. Swami Raganathananda (1991) Swami Vivekananda: His Humanism, Moscow State University lecture, Calcutta, Advatia Ashram.
19. V.R Mehta (1992) Foundations of Indian, Political Thought, New Delhi, Manohar.

## **MPSC 1.2: International Relations.**

### **UNIT-I**

- a. Meaning, Nature, Development and Scope of International Relations.
- b. Theories of International Relations: Realism, Liberalism and Marxism  
Neo-Realism, Neo-Liberalism, Constructivism and feminism

### **UNIT-II**

#### Concepts:

- a. National Power, Balance of Power and Sovereignty
- b. Security- Collective Security and Cooperative Security, Human Security

### **UNIT-III**

- a. End of Cold War and Post-Cold War World Order
- b. Issues of global justice and global terrorism

### **UNIT – IV**

- a. **National Interest and Diplomacy:**  
Components, Types, Methods of securing National Interest; Development of Diplomacy, Functions and Types of Diplomacy; Decline of Diplomacy; Dynamics of Conflict and War.
- b. **Disarmament and Arms Control**  
Meaning of Disarmament; Meaning of Arms Control; Military, Economic and Moral Arguments for Disarmament; Declaration of the Indian Ocean as a Zone of Peace; Implementation; Challenges and Prospects.

### **Unit – V**

- a. United Nations, WTO and SAARC- Its Structure, Role and Impact
- b. Human Rights, Environmentalism and Development

### **Reading Material**

1. S.P.Verma - International System and Third World, New Delhi, Vikas Pub.1988.
2. Vinaykumar Malhotra - International Relations.
3. Ghosh, Peu – International Relations, PHI Learning Pvt. Ltd., Delhi, 2009.
4. Prem Arora - Comparative Politics and International relations, Bookhives, New Delhi.
5. Kashikar, M. S. – SAARC: Its Genesis, Development & Prospects, Himalaya Publishing House, Mumbai, 2000.
6. P.Allan & Goldman (Ed.) - The End of the Cold War, Dordrecht, Martinus Nijhoff, 1992
7. A. Appadurai - National Interest and Non-Alignment, New Delhi, Kalinga Publication, 1999
8. R. Aron - Peace and War: A Theory of International Relations, London, Fontana, 1966
9. S. Burchill et. Al., - Theories of International Relations, Hampshire, Macmillan, 2001
10. I. Claude- Power and International Relations, New York, Random House, 1962.

11. A.A Coulombis & Wolf - Introduction to International relations: power and Justice, New York, Praeger, 1989.
12. K.W. Deutsch - The Analysis of International Relations, New Delhi, Prentice Hall, 1989

### **MPSC 1.3: Modern Political Ideologies**

#### **Unit I:**

Liberalism: Classical, Neo-Classical and Libertarianism

#### **Unit II:**

Socialism: Origin of Socialist Thought and its various kinds

#### **Unit III:**

Marxism: Meaning Nature and Philosophy and Developments in Marxist thought.

#### **Unit IV:**

- a. Feminism: Meaning, Nature, Philosophy and Kinds of Feminism- Liberal, Marxist, Radical and Black feminism.
- b. Environmentalism: Meaning, Nature, Philosophy, Development and Movements.

#### **Unit V:**

- a. Fascism: Meaning Nature, Philosophy, Development – Old and New
- b. Nationalism: Meaning, Nature, Philosophy and Forms

#### **Reading Materials:**

1. L. Derfler, Socialism Since Marx: A Century of the European Left, London, Macmillan 1973.
2. S. G. Payne, Fascism: Comparison and Definition, Madison, University of Wisconsin Press, 1980.
3. G. de Ruggiero, The History of European Liberalism, Boston, Beacon, 1959.
4. Rand, The Fountainhead, New Progress, London, Gollancz, 1940.
5. L. Strauss, Liberalism: Ancient and Modern, New York, Basic Books, 1968.
6. O'Sullivan, Fascism, London, J. M. Dent and Sons, 1983.
7. F. D. Torre, E. Mortimer and J. Story, Eurocommunism: Myth or Reality, Harmondsworth, Penguins, 1979.
8. F. M. Watkins, The Age of Ideology- Political Thought from 1750 to the Present, Englewood Cliffs NJ, Prentice Hall, 1964.
9. E. Weber, Varieties of Fascism, New York, Van Nostrand, 1966.

### **MPSC 1.4: Indian Government and Politics**

#### **UNIT-I: Foundations of Indian Government and Politics**

- a. Philosophy of the Constitution of India, Salient Features and Constitutional Objectives, Idea of Welfare State.
- b. Nature of rights- civil, political, social and economic and role of Judiciary

#### **UNIT-II: Structure of Governance:**

- a. Indian Federalism: Features of Indian federalism, Strains and Tensions between the Centre and State.
- b. Union Government: President, Prime Minister and Cabinet  
Parliament-composition, powers and functions

#### **UNIT-III: Process of Indian Democracy:**

- a. Electoral Politics: Election commission and electoral process, Party System in India
- b. Pressure Groups, Interest Groups and Social Movements

**UNIT-IV: Issues in Indian Politics:**

- a. Politics of identity and Representation- Caste, Language, Religion and Region
- b. Development, communalism and violence, terrorism, radical politics.

**Unit-V:**

- a. Nation Building and National Integration; emerging issues:
- b. Politics of Governance, Role of Civil Society/NGOs

**Reading Material:**

1. G. Austin, *The Constitution of India: Cornerstone of a Nation*, Oxford, Oxford University Press, 1966.
2. ———, *Working a Democratic Constitution: The Indian Experience*, Delhi, Oxford University Press, 2000.
3. ——— and B. Parekh (ed.), *Crisis and Change in Contemporary India*, New Delhi, Sage. 1994.
4. S. Bayly, *Caste, Society and Politics in India from the Eighteenth Century to the Modern Age*, Cambridge, Cambridge University Press, 1999.
5. S. Bose and A. Jalal (eds.), *Nationalism, Democracy and Development: State and Politics in India*, Delhi, Oxford University Press, 1997. Politics
6. N. Chandhoke, *Beyond Secularism: The Rights of Religious Minorities*, Delhi, Oxford University Press, 1999.
7. ——— and et.al., (eds.), *Transforming India: Social and Political Dynamics of Democracy*, New Delhi, Oxford University Press, 2000.
8. R. L. Hardgrave, *India: Government and Politics in a Developing Nation*, New York, Harcourt, Brace and World, 1965.
9. T. B. Hansen, *The Saffron Wave: Democracy and Hindu Nationalism in Modern India*, Princeton NJ, Princeton University Press, 1999.
10. N. Jayal, *Democracy and the State: Welfare, Secularism and Development in Contemporary India*, Delhi, Oxford University Press, 1999.
11. R. Jeffery and P. Jeffery, *Population, Gender and Politics: Demographic Change in Rural North India*. Cambridge, Cambridge University Press, 1997.
12. A. Kohli, *Democracy and Discontent: India's Growing Crisis of Governability*, Cambridge, Cambridge University Press, 1990.
13. R. Kothari, *Politics in India*, Delhi, Orient Longman, 1970.
14. T. K. Oomen, *Protest and Change: Studies in Social Movements*, New Delhi, Sage, 1990.
15. S. H. Rudolph and L.I. Rudolph, *In Pursuit of Lakshmi- The Political Economy of the Indian State*, Delhi, Orient Longman, 1987.
16. T. Sathyamurthy (ed.), *Social Change and Political Discourse in India*, Vols.3, Oxford, Oxford University Press, 1996.

**Choice Based Credit Transfer (CBCT)**

**(To be opted from other Disciplines)**

## SEMESTER - II

### MPSC 2.1 Western Political Thought

#### Unit I:

Plato: Ideal State, Laws & Statesman, Theory of Justice.

Aristotle: State, Classification of Constitution, Revolution, Aristotle as a scientific thinker.

#### Unit II:

Social Contract Theory: Significance and Achievements:

Hobbes, Locke and Rousseau.

#### Unit III:

Hume: Birth of Empiricism; Hume's Conception of Reason, fact and Value; Human Psychology; Idea of Government and Legitimacy.

#### Unit IV:

Theory of Utilitarianism: Meaning, Nature, Significance and Contribution.

Bentham and J.S.Mill.

#### Unit V:

Scientific Socialism: Meaning, Nature, Significance and Impact on Political Theory.

Hegel and Marx.

#### Readings:

1. History of Political Thought – Sukhbir Singh
2. History of Political Thought – J. P. Suda
3. Boucher David and Paul Kelly, 2004, Fifty Great Political Thinkers, Oxford University Press.
4. Parekh Bhikhu and Thoms Pantham, Political Discourse: Explorations in Indian and Western Political Thought, 1987 New Delhi, Sage.
5. Nelson Brian R. 2006, Western Political Thought, second Edition, Pearson Education, Delhi
6. Barker, E (1995) *The Politics of Aristotle* translated with Introduction, Notes and Appendix, Oxford University Press.
7. Barker, E (1960) *Greek Political Theory, Plato and His Predecessors*, London.
8. Mukhopadhyay, Amal Kumar (1988) *Western Political Thought – From Plato to Marx*. K.P Bagchi & Company, Calcutta.
9. Sabine, H. George & Thomas L. Thorson (1973) *A History of Political Thought*. Oxford and IBH Publishing Co. Pvt. Ltd. New Delhi.
10. Subrata, Mukherjee & Sushila Ramasawamy (1998) *Great Western Political Thinkers -1 (PLATO)*. Deep & Deep Publications, New Delhi.

### MPSC 2.2: Contemporary Political Issues

#### Unit I:

- a. Political Theory & Ideology: Nature & Functions of Political theory, Debate on decline & resurgence of Political Theory,
- b. Distinction between science, ideology and theory; Nature & functions of ideology, Debate on the 'End of Ideology'

#### Unit II:

Contemporary Liberalism

- a) Libertarianism: Nozick
- b) Theories of Justice: Rawls

**Unit III: Contemporary Democratic Theory:**

- a) Participatory Theory
- b) Deliberative Theory
- c) Key debates in Contemporary democratic theory
- d) Representation Vs participation
- e) Democracy & Development

**Unit IV: Critical Theory**

- a) The tasks of Critical theory
- b) Rise & demise of Public Sphere

**Unit V:**

Feminism & Post-Modernism

- a) Gender & Sexuality
- b) Sexual Equality & Discrimination
- c) Post modernism: Critique of Science and Modernity.

**Readings:**

1. Brecht, Arnold, *Political Theory*, New Jersey, 1950.
2. Foucault, Michael, *Power / Knowledge*.
3. Goodin, Robert E. and Hans Dieter Klinge Mannled, *A New Hand Book of Political Science*, Oxford, Oxford UP, 1996.
4. Goodin, Robert E and Phillip Pettit (ed.), *A Companion to Contemporary Philosophy*, Oxford, OUP, 1993.
5. Hampton, Jean, *Political Philosophy: An Introduction*, Delhi, OUP, 1998.
6. Macpherson, C. B., *The Political Theory of Possessive Individualism*, Oxford, OUP, 1962.
7. Miller, David and Larry Siedentop (ed.), *The Nature of Political Theory*, Oxford, Clarendon Press, 1998.
8. Nicholson, Linda J. (ed.), *Feminism- Post-Modernism*, Routledge, New York, 1989.
9. Rawls, John, *A Theory of Justice*, Oxford University Press, 1971.
10. Young, Iris Marion, *Justice and the Politics of Difference*, New Jersey, Princeton University Press.

**MPSC 2.3: Comparative Politics**

**(This paper is to be studied with reference to the political systems in UK, USA, Switzerland and China)**

**UNIT-I**

- a. Comparative Politics: Meaning Nature and Scope, Growth of Comparative Politics;
- b) Traditional Approaches to the Study of Comparative politics: Modern Approaches to the Study of Comparative Politic

**UNIT-II:**

Constitutionalism: Meaning and Features, Development of Constitutionalism

**Unit – III:**

Comparative Study of Political Institutions: Executive, Legislature and Judiciary

**UNIT-IV:**

- a. Political Development, Modernization and Change: Definition, Implications and Dimensions
- b. Voting Behaviour; Role of Women in Politics, Pressure Groups and Social Movements

**UNIT-V:**

- a. Political Culture: Meaning, Nature and Components
- b. Political Socialization and Communication: Meaning, Nature and Agents of Political Socialization and mobilization

**Reading Material:**

1. Almond and G.B. Powell Jr.- Comparative Politics; a Development Approach, Boston, Little Brown, 1966.
3. G.A. Almond and J.S. Coleman- The Politics of Developing Areas, Princeton NJ, Princeton University Press, 1960.
4. G.A. Almond and S. Verba- The Civic Culture; Political Attitudes and Democracy in Five Nations, Princeton NJ, Princeton University Press, 1963
7. A. Bebler and J. Seroka (eds.), Contemporary Political Systems: Classifications and Typologies, Boulder Colorado, Lynne Rienner Publishers, 1990.
8. L.J. Cantori and A.H. Zeigler (ed.), Comparative Politics in the Post-Behaviouralist Era, London, Lynne Rienner Publisher, 1988.
9. R.H. Chilcote, Theories of Comparative Politics: The Search for a Paradigm Reconsidered, Boulder Colorado, Westview Press, 1994.
11. J.C. Johari, Comparative Political Theory: New Dimensions, Basic Concepts and Major Trends, New Delhi, Sterling, 1987.
12. R.C. Macridis, The Study of Comparative Government, New York, Doubleday, 1955.
13. G. Sartori, Parties and Party Systems: A Framework for Analysis, Cambridge, Cambridge University Press, 1976.

**MPSC 2.4: Political Sociology****Unit I:**

Political Sociology: Origin and Development of Political Sociology as a Discipline, Contributions of Karl Marx and Max Weber; Meaning, Scope and Relevance of Political Sociology.

**Unit II:** Modern Concepts in Political Sociology: Political Culture, Political Socialization, Political Participation, Political Modernization and Political Development

**Unit III:**

Elitism & Marxism: Elite Theory, Gaetano Mosca, Roberto Michels, Vilfredo Pareto, James Burnham and C. Wright Mills.

**Unit IV:**

Social Change: Meaning and Nature of Social Change; Theories of Social Change; Agents of Social Change; Resistance to Social Change;

**Unit V**

- a. Demographic Change in India: Meaning and Nature of Demographic Change in India, Factors responsible for Demographic Change in India; Impact of Demographic Change in Socio-Economic and Political spheres.
- b. Migration: Meaning and Nature of Migration, Rural-Urban Migration, Inter-State Migration; Impact of Migration; Measures to check Migration in India.

**Suggested Readings:**

- 1.. Ashraf, Ali and L.N. Shama, Political Sociology – A New Grammar of Politics, Universities Press (India) Ltd., Hyderabad, 1995.
2. Bottomore, Elites and Society, Penguin Books, 1976.
3. Gupta, Dipankar, Political Sociology in India: Contemporary Trends, Orient Longman, 1995.
4. Heywood, Andrew, Political Ideologies: An Introduction, Macmillan, 1999.
5. Mukhopadhyay, Amal, Political Sociology, K.P. Bagchi and Company, Calcutta, 1997.
6. Rush, Michael and Philip Althoff, An Introduction to Political Sociology, Nelson, 1971.
7. Sarah Joseph, Political Theory and Power, Foundation Books, New Delhi, 2004.

**CBCT. (To be opted from other Disciplines)**



## SEMESTER - III

### MPSC 3.1: Public Administration

#### Unit I: Public Administration:

- a. Meaning, Nature, Evolution and Scope
- b. Administrative Theories:

Administrative Management (Gullick, Urwick and Fayol)

Rational Decision making theory (Herbert Simon), Innovation and Entrepreneurship (Peter Drucker), and Ecological Theory (F.W. Riggs)

#### Unit II: Personnel Administration:

- a. Max Webber's Views on Bureaucracy; Committed Bureaucracy, Neutrality and Downsizing of Bureaucracy
- b. Role of Civil Service in Developing Countries, Administrative Ethics.

#### Unit III:

Accountability and Control:

Concepts of Accountability and Control; Legislative, Executive and Judicial Control; People's Participation; Right to Information.

#### Unit IV: Administrative Behaviour:

- a. Administrative Management: Leadership, Communication and Motivation.
- b. Public Policy: Concept and formulation

#### Unit V:

- a. E-governance: Meaning, Advantages, Challenges and e-governance in India
- b. Removal of citizen's Grievances: Lokpal and Lokayukta, Role of Civil Society.

#### Suggested Readings:

1. Basu, Rumki (2013) *Public Administration- Concepts and Theories*, Sterling Publishers Private
2. Chakrabarty, Bidyut & Mohit Bhattacharya (2005) *Administrative Change and Innovation – A Reader*. Oxford University Press.
3. Chakrabarty, Bidyut and Prakash Chand (2012) *Public Administration in a Globalising World- Theories and Practices*. Sage Publications.
4. Misra B.B (1977) *Bureaucracy in India*, Delhi, Oxford Univ. 1977.
5. Maheshwari S.R., 1991, *Issues and Concepts In Public Administration*, New Delhi, Allied Publishers.
6. Naidu S.P., 1996, *Public Administration: Concepts and Theories*, Hyderabad, New Age, International Publishers
7. Sharma Urmila & S.K Sharma (1997) *Public Administration*. Atlantic Publishers and Distributors.
8. Self, Peter (1990) *Administrative Theories and Politics*. S. Chand and Company, New Delhi.
9. Avasthi & Maheshwari (1996) *Public Administration*, Lakshmi Narain Agarwal Educational Publishers.
10. C. P. Bhambri, *Administration in changing society*, National, Delhi, 1978.
11. M. Bhattacharya, *Bureaucracy and Development Administration*, Uppal, Delhi, 1979.

## **MPSC 3.2: Foundation of Social Science Research**

### **Unit I:**

a) Introduction to Research b) Scope, Limitations & Relevance of Social Sc. Research c) Objectivity in Social Science Research

### **Unit II:**

a) Approaches to Social Science Research b) Review of Literature c) Ethical Issues in Research

### **Unit III:**

a) Hypothesis b) Sampling Techniques c) Research Design

### **Unit IV:** Techniques of Data Collection:

a) Observation b) Interview c) Questionnaire d. Schedule.

### **Unit V:** a) Quantitative and Qualitative Data Analysis; b) Report Writing.

#### Suggested Readings:

1. Alan Thomas, Joanna Chattaway and Marc Wuyts (eds.) 1998. Finding Out fast Investigative Skills for policy and development, Vistaar Publications
2. Gerring J. 2001. *Social Science Methodology: A Critical Framework*. Cambridge, UK: Cambridge Univ. Press.
3. Goertz G. 2006. *Social Science Concepts: A User's Guide*. Princeton, NJ: Princeton Univ. Press.
4. Alexander L. George and Andrew Bennett. 2005. *Case Studies and Theory Development in the Social Sciences*. Cambridge, MA: MIT Press.
5. Young P.V, "*Scientific Social Survey and Research*", Prentice Hall, New Delhi, 1975.
6. Gopal M.H 1970. *An Introduction to Research Procedure in Social Sciences*. Asia Publishing House, Bombay.
7. Goode & Hatt 1996, *Methods in Social Research*, MacGraw Hills, New York.

## **MPSC 3.3: India and the World.**

### **UNIT-I**

- a. Idea of India- Self perception and self image
- b. India in the World- India 's perception of the world and world 's perception of India, Historical- colonialism, imperialism, third-worldist -Evolutionary- power sharing, multilateral interest orientation

### **UNIT-II**

Indian Foreign Policy: Principles and Objectives in the changing world scenario, Determinants of Indian Foreign Policy

### **Unit- III**

India's Relations with other Nation: Sino-Indian Relations, Indo-Pakistan Relations, Indo-Russia Relations, India – USA Relations.

### **Unit IV:**

India and UNO: Problem of Restructuring UN and issue of Permanent Membership in Security Council

### **Unit V:**

India in post cold war World order: Foreign policy shifts in relation to great powers, foreign policy with regards to SAARC countries. Look East Policy of India: Relations with ASEAN.

### Books recommended

1. Foreign Policy of India – V. N. Khanna
2. Indian Foreign Policy – J. N. Dixit
3. Indian Foreign Policy in Changing World – V. P. Dutt
4. Vandana Ashtahan, India's Foreign Policy and Subcontinental Politics
5. S. Bhattacharya, Pursuit of National Interest through Non alignment, Calcutta, university press, 1978.
6. R. Badrock, India's Foreign Policy Since 1971, London, Royal Institute for International Affairs, 1990.
7. C. Hill, Changing Politics of Foreign Policy, Hampshire, Macmillan, 2001.
8. S. Mansingh (ed), India's Foreign Policy in 21st Century, New Delhi, Foreign Policy Institute, 1999.
9. J. N. Dikshit, India's Foreign Policy and its Neighbours, Gyan Publishers, new delhi, 2001.

### **ELECTIVES:**

(Choose any one from the following elective papers)

#### **MPSC 3.4 A: International Law**

##### **UNIT-I:**

- a. The Origin, Development and Sources of International Law
- b. Subjects of International Law: States, International Organizations, Rights & Duties of Individuals

##### **UNIT-II:**

- a. Recognition and Jurisdiction of State, Treaty Obligations, Laws of the Sea
- b. State Territory, Acquisition & Loss of Territory, State Succession, Intervention

##### **UNIT-III:**

- a. Laws of Sea, Air Space, Outer Space and Environment; Piracy on High Seas, Hijacking. Extradition, Asylum
- b. Laws of War, War Crimes, Prisoners of War and Refugees

##### **UNIT-IV:**

- a. Laws of Neutrality, Blockade, Right of Visit & Search
- b. International Court of Justice, International Criminal Court

##### **Unit V:**

Deplomacy: Vienna Convention on Diplomatic Relations 1961- Consuls, Nationality, Extradition, Asylum.

##### **Reading Material:**

1. S. D. Bailey, Prohibitions and Restraints in War, London and New York, Oxford University Press, 1972.
3. J. L. Brierly, The Outlook for International Law, Oxford, The Clarendon Press, 1944.
4. ———, The Law of Nations, 4th edn., Oxford, The Clarendon Press, 1949.
5. ———, The Basis of Obligation in International Law, London, Oxford University Press, 1958.
6. I. Brownlie, Principals of Public International Law, London, Oxford University Press, 1973.
10. K. Deutsch and S. Hoffman (ed.), The Relevance of International Law, Oxford, The Clarendon Press, 1955.
12. ———, The Equality of States in International Law, Cambridge, Cambridge University Press, 1920.
13. I. J. Dore, International Law and Superpowers: Normative Order in a Divided World,

15. R. Falk, *Legal Order in a Violent World*, Princeton NJ, Princeton University Press, 1968.
17. C. G. Fenwick, *International Law*, Oxford, The Clarendon Press, 1939.
18. W. Friedmann, *The Changing Structure of International Law*, New York, Columbia University Press, 1964.
20. R. Higgins, *Development of International Law through the political Organizations of the United Nations*, 1963.
22. P. C. Jessup, *Modern Law of Nations*, New York, Macmillan, 1948.
23. M. A. Kaplan and N. de B. Katzenbach, *The Political Foundations of International Law*, New York, John Wiley and Sons, 1961.
24. G. W. Keeton, *National Sovereignty and International Order*, London, Peace Book Company, 1939.
27. ———, *Principles of International Law*, New York, Rinehart and Co., 1952.
29. J. Mattern, *Concepts of State, Sovereignty and International Law*, Baltimore, Johns Hopkins Press, 1928.

### **MPSC 3.4 B – Modern Political Analysis**

#### **Unit-I: Modern Political Analysis:**

- a) Nature and Evolution
- b) Approaches: Traditional, Philosophical, Historical, Institutional;
- c) Modern Approaches - Behaviouralism, Post- Behaviouralism, Rational Choice.

#### **Unit- II: Approaches:**

- (a) Structural-Functional, (b) David Easton System Theory, (c) Decision Making Theory, (d) Communication- Deutsch-Snyder

#### **Unit – III: Classical Trends in Political Analysis**

- a. Elite Theory - Ruling Class, Power El Power Elites, Democratic Elitism.
- b. Pluralism-Robert Dahl

#### **IV Revisionist Trends in Political analysis:**

Group Theory, New Institutionalism, Neo-Statism .

#### **V Political Development & Modernization:**

- a) Lucian Pye, b) Seymour Martin Lipset, c) Huntington, d) Talcott Parson

#### **Suggested Readings:**

- 1) Almond G.A, and Coleman, 1960. *The Politics of Developing Areas*, Princeton University Press.
- 2) David Easton, 1979. *A Systems Analysis of Political Life*, University of Chicago.
- 3) Daya Krishna 1979. *Political Development: A Critical Perspective*, Oxford University Press, Delhi.
- 4) James C. Charlesworth (ed) 1967. *Contemporary Political Analysis*, Free Press, New York.
- 5) Kathleen Thelen 1999. Historical Institutionalism in Comparative Politics, *Annual Review of Political Science*, Vol.2.
- 6) Lipset, Seymour Martin. 1959. Some Social Requisites of Democracy: Economic Development and Political Legitimacy. *The American Political Science Review* 53 (1) 69-10
- 7) Lloyd I. Rudolph and Susanne Hoeber Rudolph 1984. *The Modernity of Tradition: Political Development in India*, Orient Longman, India.
- 8) Lucian Pye, 1966. *Aspects of Political Development*, Little Brown, Boston.
- 9) Peter A. Hall and Rosemary C.R Taylor 1996. Political Science and the three New Institutionalisms, *Political Studies*.

- 10) Samuel P Huntington and Myron Weiner (ed.) 1987. *Understanding Political Development*, Little Brown.
- 11) Samuel P Huntington 1965. Political Development and Political Decay, *World Politics*, Vol.17, No. 3.
- 12) Somjee A.H (ed.) 1997. *Rethinking in Political Development*, Brill Academic Publisher.
- 13) Verma S.P, 1984. *Modern Political Theory*, Vikas Publications, New Delhi.

### **MPSC 3.4 C: POLITICS OF DEVELOPING COUNTRIES**

#### **Unit-I**

- a. Genesis of Colonialism, Types of Colonialism
- b. Nature of anti colonial Struggle in Developing countries

#### **Unit-II**

- a. Nature of Constitutionalism and Post colonial State
- b. Political Institutions in post colonial states- nature and types; appraisal

#### **Unit-III**

- a. Political Leadership in developing countries: nature, objectives, significance and role
- b. Political Parties in post colonial developing countries- nature, types, objectives, role and performance

#### **Unit-IV**

- a. New Social Movements in developing countries- nature, role, types and political impact
- b. Role of Military, Waves of Democratic Expansion: recent trends

#### **Reading Material :**

1. H. Alavi and T. Shanin, *Sociology of Developing Societies*, London, Macmillan, 1982.
2. S. Amin, *Accumulation on a World Scale: A Critique of the Theory of Underdevelopment*, New York, Monthly Review Press, 1974.
3. B. Anderson, *Imagined Communities: Reflections of the Origin and Spread of the Nationalism*, 2nd edn., London, Verso, 1991.
4. Z. F. Arat, *Democracy and Human Rights in the Developing Countries*, London, Verso, 1992.
5. H. Asfah (ed.), *Women and Politics in the Third World*, London, Routledge, 1996.
6. M. Berger, —The End of the Third World, *Third World Quarterly*, 15/2, 1994.
7. J. M. Bystdzienski (ed.), *Women Transforming Politics: Worldwide strategies for Empowerment*, Bloomington, Indiana University Press, 1992.
8. P. Cammack, D. Pool and W. Tordoff, *Third World Politics: A Comparative Introduction*, 2nd edn. London, Macmillan, 1993.
9. C. Clapham, *Third World Politics: An Introduction*, Beckenham, Croom Helm, 1985.
10. R. Cohen and P. Kennedy, *Global Sociology*, London, St. Martin Press, 1999.
11. L. Diamond (ed.), *Political Culture and Democracy in Developing Countries*, Boulder Colorado, Lynne Rienner, 1993.
12. D. Engels and S. Marks (eds.), *Contesting Colonial Hegemony, State and Society in Africa and India*, London, I. B. Tauris, 1994.
13. J. A. Ferguson, —The Third World, in R. J. Vincent (ed.), *Foreign Policy and Human Rights*, Cambridge, Cambridge University Press, 1996.
14. D. K. Fieldhouse, *The West and the Third World: trade, Colonialism, Dependence and Development*, Oxford, Blackwell, 1999.
15. F. Fukuyama, *The End of History and the Last Man*, Harmondsworth Penguin, 1992.
16. J. Gelb, *Feminism and Politics: A Comparative Perspective*, Berkeley, University of California Press, 1989.
17. A. Giddens, *The Consequences of Modernity*, Cambridge, Polity Press, 1990.
18. J. Harbermas, —New Social Movements, *Telos*, 49, Fall, 1981.

## **MPSC 3.4 D: Women and Politics**

### **Unit 1: History of Feminism**

- a. Waves of Feminism: First Wave of Feminism, Second Wave of Feminism, Third Wave of Feminism

### **Unit II: Theories of Feminism**

Socialist Feminism, Liberal Feminism, Radical Feminism, Marxist Feminism, Cultural Feminism, Eco Feminism, Postmodern Feminism, Multicultural Feminism, Global Feminism

### **Unit III: Women's Movements**

Historical Perspective, Women's Movement in India, Contemporary Movements, Women's Issues in South Asia, Women in Contemporary Southeast Asia

### **Unit IV: Violence against Women**

Causes of Violence against Women, Forms of Violence, Sexual Harassment at Workplace, Female Trafficking

### **Unit V: Political and Economic Empowerment of Women in India:**

- a. Factors that affect Political Participation of Women, Measures adopted in India for Political Empowerment of women, Role and Position of Women in the Parliament and State Legislatures.
- b. Importance of Economic Empowerment, Economic Issues and Challenges Confronting Women, National Policy for Empowerment, 2001.

1. A Saxonhouse (1985) *Women in History in Political Thought, Ancient Greece to Machiavelli*, New York Praefar.
2. B.Nelson and N Chowdhary (ed)(1997) *Women's and Politics Worldwide*, Delhi Oxfords Univ. press.
3. Engles F.(2010) *Origin of family and Private and the State*.Penguin
4. G.Forbes(1976) *Women in Modern India* ,Cambridge Press 1976.
5. G.Gantens(1976) *Feminisms and Philosophy, Perspective on Differences and Equality*, Cambridge Policy Press.
6. ICSSR Status of Women's Committee Report 1975.
7. Patnail L (ed) (1980) *Chains of Servitude*, New Delhi, Vikas.
8. K. Gail (1980) *The Extended Family-Political participation of women in India*, Chankya Publications, Delhi.
9. Lenin V.I (2004) *On the Emancipation of Women*.University Press of the Pacific
10. Michele Basset (1980) *Women's oppression Today*, London.
11. M.Okin(1979) *Women in Western Political Thought*, Princeton Univ.Press.
12. M.Okin(1989) *Justice, Gender and the Family*, New York, Routedge.
13. M.I Shanley and C Patenman (1991) *Feminist Interpretation and Political Theory*, Cambridge Polity Press 1991.
14. M.Wollstonecraft(1929) *A Vindication of the Rights of Women*, London Everyman.
15. N.Pagh(1992) *Women and Women's Movement in Britain 1914-1959*, London Macmillan

## **CBCT - III**

**(To be opted from other disciplines)**

## SEMESTER - IV

### MPSC 4.1 State Politics in India

#### UNIT-I:

- (a) Nature and Significance of the study, Patterns of state politics
- (b) Determinants of State Politics: Social, Economic, Political and constitutional

#### UNIT-II:

- a. Centre-State Relationship – Legislature, Administrative and Financial
- b. Impact of National Politics on State Politics; Role of Regional Political Parties

#### UNIT-III :

- (a) Issues in State Politics: Demand of autonomy and small states, border and river water sharing, Caste and Ethnic inclusion and exclusion
- (b) Linguistic, regional, religious communalism, development, environment and gender justice

#### UNIT-IV:

- (a) Electoral Politics: party politics of regional political parties, political elites- functions and roles and social movements,
- (b) Human Development issues: regional imbalances, literacy, sex ratio, poverty, unemployment.

#### Reading Material :

1. B. Arora and D. V. Verney (eds.), Multiple Identities in a Single State: Indian Federalism in a Comparative Perspective, Delhi, Konark, 1995.
2. M. Chadda, Ethnicity, Security and Separatism in India, Delhi, Oxford University Press, 1997.
3. A. Chanda, Federalism in India: A Study of Union-State Relations, London, George Allen & Unwin, 1965.
4. P. Chatterjee (ed.), States and Politics in India, Delhi, Oxford University Press, 1997.
5. V. Doss, Impact of Planning on Centre-State Financial Relations in India, New Delhi, National, 1978.
6. R. Khan, Rethinking Indian Federalism, Simla, Indian Institute of Advanced Studies, 1997.
7. A. Kohli (ed.), India 's Democracy: An Analysis of Changing State - Society Relations, Princeton, Princeton University Press, 1988.
8. Iqbal Narain (ed.), State Politics in India, Meerut, Meenakshi Prakashan, 1967.
9. S. Pai, State Politics: New Dimensions: Party System, Liberalization and Politics of Identity, Delhi, 2000.
10. A. Prasad, Centre and State Powers under Indian Federalism, New Delhi, Deep and Deep, 1981.
11. A. Ray, Tension Areas in India's Federal System, Calcutta, The World Press, 1970.
12. S. Singh (ed.), Union-State Financial Relations in India with special reference to the underdeveloped states, New Delhi, Sterling, 1980.
13. G. Smith (ed.), Federalism: The Multi Ethnic Challenge, Harlow Longman, 1995.
14. Subhash Kashyap – National Resurgence through Electoral Reforms; Shipra Publications, Delhi (2002)

## **MPSC 4.2: Indian Administration**

### **UNIT-I**

- a. Evolution of Indian Administration: Colonial and Post-Independence Period
- b. Features of Indian Administration, The Framework of Indian Constitution.

### **UNIT II**

- a. **Union Executive:** President, Prime Minister, Central Ministries, Central Secretariats and Departments, Parliamentary Control over Administration
- b. **State Executive:** Governor, Chief Minister and State Secretariat, ministries and departments

### **UNIT III**

- a. Field Administration: 73rd & 74th Amendment Acts
- b. District Administration - Role & Functions of District Collector; Zilla Parishad and Role of the CEO, Panchayat Samiti and BDO, Gram Panchayat and Gram Sevak Urban Administration - Municipal Corporation, Municipal Commissioner and Mayor

### **UNIT-IV:**

- (a) UPSC, CAG; Public Sector Undertakings –forms and functions
- (b) Civil Services and other specialized services, Administrative Reforms, Corruption, Bureaucracy in the Globalised era, conflict between political and civil office

### **Reading Material:**

1. R. K. Arora (ed.), Administrative Change in India, Jaipur, Alekh Publishers, 1974.
2. P. L. Bansal, Administrative Development in India, New Delhi, Sterling, 1974.
3. C. P. Bhambri, Bureaucracy and Politics in India, Delhi, Vikas Publications, 1971.
4. R. Braibhanti and J. Spengler (eds.), Administration and Economic Development in India, Durnham, Duke University Press, 1963.
5. A. Chandra, Indian Administration, London, Allen & Unwin, 1968.
6. P. R. Dubshashi, Rural Development Administration in India, Bombay, Popular Prakahsan, 1972.
7. S. C. Dube (ed.), Public Services and Social Responsibility, Shimla, Institute of Advanced Studies, 1979.
8. R. B. Jain, Contemporary Issues in Indian Administration, Delhi, Visha, 1976.
9. S. R. Maheswari, Evolution of Indian Administration, Agra, Lakshmi Narain Aggarwal, 1970.
10. M. V. Mathur, and I. Narain (ed.), Panchayti Raj, Planning & Democracy, Bombay, Asia Publishing House, 1969.
11. O. P. Motiwal (ed.), Changing Aspects of Public Administration in India, Allahabad, Chugh Publications, 1976.
12. V. A. Pai Panandiker (ed.), Development Administration in India, Madras, Macmillan, 1974.
13. Maheshwari Shriram, Local Government in India, Laxminarayan Agrawal, Agra, 1996



### **MPSC 4.3: Globalization and its Impact in India**

**Unit-I:** Globalization: Meaning, nature and theories; Causes of India 's participation in the Globalization process

**Unit-II:** Globalization 's Impact on India: Issues of national Sovereignty and Jurisdiction; Issues of national security and diplomatic Alliances

**Unit-III:** Political Economy and Globalization - Impact of Trans National Corporations and Multinational Corporations on India; Impact and Role of WTO, IMF and IBRD

**Unit IV:** Impact of Globalization on Indian Economy: Privatization, Liberalization, and the issues of economic inclusion and exclusion

**Unit V:** Critics of Globalization, Alternative models and Protest Movements against Globalization

#### **Suggested Readings:**

1. R. Holton, *Globalization and the Nation State*, Basingstoke, Macmillan, 1998.
2. P. Aghin and J. Williamson, *Growth Inequality and Globalization*, Cambridge, Cambridge University Press, 1998.
3. A. Alesina, E. Spolaore and R. Wacziarg, *Economic Integration and Political Disintegration*, Working Paper 6163, Chicago, National Bureau of Economic Research, 1997.
4. J. Anderson, C. Brook and A. Cockrane (eds.), *A Global World? Re-ordering Political Space*, Oxford, Oxford University Press, 1995.
5. D. Blake and R. Walters, *The Politics of Global Economic Relations*, 5th edn., Englewood Cliffs, Prentice Hall, 2001.
6. J. Boli and G. Thomas (eds.), *Constructing World Culture: International Non- Governmental Organizations since 1875*, Stanford CA, Stanford University Press, 1999.
7. M. Bordo, B. Eichengreen, and D. Irwin, —Is Globalization Really Different Than Globalization a Hundred Years Ago? | National Bureau of Economic Research, Working Paper, 1995.
8. L. Bryan and D. Farrell, *Market Unbound: Unleashing Global Capitalism*, New York, John Wiley and Sons, 1996.
9. P. Buchanan, *The Great Betrayal: How American Sovereignty and Social Justice Are Being Sacrificed to the Gods of the Global Economy*, New York, Little Brown, 1998.
10. R. Burbach, O. Núñez and B. Kagatlitsky, *Globalization and its Discontents: The Rise of Postmodern Socialisms*, London, Pluto, 1997.
11. J. M. Bystdzienski (ed.), *Women Transforming Politics: Worldwide strategies for Empowerment*, Bloomington, Indiana University Press, 1992.
12. P. Doremus, et al., *The Myth of the Global Corporation*, Princeton NJ, Princeton University Press, 1998.
13. T. Courschene, *Room to Maneuver? Globalization and Policy Convergence*, Kingston Ontario, McGill-Queen's University Press, 1999.
14. A. Davis, and D. Wessel, *Prosperity: The Coming Twenty-Year Boom and What It Means to You*, New York, Times Books, 1998.

15. L. Diamond, J. Linz and S. Lipset (eds.), *Politics in Developing Countries: Comparing experiences with Democracy*, Boulder Colorado and London, Lynne Rienner, 1995.
16. G. Esping-Andersen (ed.), *Welfare States in Transition: National Adaptations in Global Economies*, Thousand Oaks California, Sage, 1996.
17. P. Evans, D. Rueschemeyer and T. Skocpol (eds.), *Bringing the State Back In*, Cambridge, Cambridge University Press, 1985.
18. F. Fukuyama, *The End of History and the Last Man*, Harmondsworth, Penguin, 1992.
19. A. Gamble and A. Payne (eds.), *Regionalism and World Order*, Basingstoke, Macmillan, 1996.

## Elective II

(Choose any one from the following elective papers)

### MPSC 4.4A: Human Rights: Theory and Practice

#### Unit I:

Human Rights: The Concept and Safeguards: Meaning, Nature- Evolution, Theoretical Foundations- International Bill of Human Rights: UDHR, ICCPR, ICESCR - Emerging Scenario: Solidarity Rights - Cultural Relativism - Human Rights and Globalisation

#### Unit II:

Human Rights and Vulnerable Groups: International Instruments –Women – Child - Refugee and Internally Displaced persons - Persons belonging to National or Ethnic, religious and Linguistics Minorities - Indigenous peoples

#### Unit III:

Human Rights In India: Indian Constitution and the Human Rights: Fundamental Rights, Directive Principles of State Policy - Human Rights and Judicial Activism - Rights of Prisoners and Judiciary - Protection of Human Rights: National Human Rights, State Human Rights Commission

#### Unit IV:

Promotion and Protection of Human Rights of Vulnerable Groups in India: Women – Children - SC/ST - National Commission for Women, Children, SC, ST, Minorities

#### Unit V:

Human Rights in the Context of North East India: Sources of Violation of Human Rights: Autonomy Movements, Ethnic Conflicts, Displacement - Role of Enforcement Agencies: Police, Security Forces - Assessment of Armed Forces Special Power Act - Role of State Human Rights Commissions - Role of Human Rights Organizations

#### Readings:

1. Basu Durga Das: *Human Rights in Constitutional Law*, New Delhi, Prentice Hall of India, 1994.
2. Browline, Lane, (Ed): *Basic Documents of Human Rights* (2nd Edition), UK, Claredon Press, 1981.
3. Evans Tony: *Politics of Human Rights; A Global Perspective*, Pluto Press, London, 2005
4. Dhamala R.R. and Sukalpa Bhattacharjee(ed), *Human Rights and Insurgency in North East India*, New Delhi Shipra, 002
5. Donnelly, Jack: *Universal Human Rights: Theory and Practice*, Ithaca Cornell University Press, 1989
6. Ellis Anthony, (Ed): *Ethnic and International Relations*, UK, Manchester University Press 1986.
7. Falk Richard, *Human Rights and State Sovereignty*, New York, Holmes and Meur, 1981.
8. Foesythe, David : *Human Rights and World Politics*, Lincoln, University of Nebraska Press 1983.
9. Hatchard John: *National Human Rights Institution: Common Wealth secretariat*, London, 1993.
10. Henkin Louis: *The Rights of Man Today*, Boulder Wintview , 1978

#### **MPSC 4.4B: Institutions and Processes in North East India**

Unit-I: Physical, Political and Economic features of the North East India; Colonial Administration and annexation of the Hill Areas; Creation of Backward Tracts and Excluded & Partially Excluded Areas ; Growth of Political Consciousness & National Movement,

Unit-II: Physical, Political and Economic features of the North East India; Colonial Administration and annexation of the Hill Areas; Creation of Backward Tracts and Excluded & Partially Excluded Areas ; Growth of Political Consciousness & National Movement,

Unit-III: Reorganization of the North Eastern States: Creation of Union territories and new states; Problems and challenges to the creation of the State of Nagaland

Unit-IV: Challenges of insurgency; Inter ethnic conflicts; Peace process in Nagaland: Role of NGOs and Civil society

Unit-V: Inner Line Permit and its Implications: NEC, DONER & their Roles of Development – Look East or Act East Policy – Modernization & Identity Politics in Northeast – Migration & Remittances for the Development

#### **Essential Readings:**

1. Andre Gunder Frank, *The development of Underdevelopment*, New England Free Press, University of Texas
2. B.P. Sing, *The Problem of Change: A study of North-East India*, 1996, Oxford University Press
3. Gerin Phukon (ed.) *Political Dynamics of North East India*, South Asian Publisher 2000
4. Jaideep Saikia, *Frontiers in Flames: North-East India in Turmoil*, Viking, New Delhi, 2007
5. Ray, B. Datta and S.P. Agarwal, *Reorganisation of North-East India since 1974*, Concept Publishing Company, 1996
6. Sajal Nag, *Contesting Marginality: Ethnicity, Insurgency and Sub nationalism in North-East India*, Manohar Publishers and Distributors, 2002
7. Sajal Nag, *Roots of Ethnic Conflict: Nationality Question in North-East India*, Mahohar Publishers and Distributors (1<sup>st</sup> edition July 1, 1990)
8. Sanjib Baruah, *Ethnonationalism in India*, Oxford University Press, 2010
9. Sanjib Baruah, *Beyond Counter-Insurgency: Breaking the Impasse in North-East India*, Oxford University Press, USA (July 15, 2009)
10. Udayon Misra, *Nation Building and Development in North-East India*, Purbanchal Prakash Guwahati

#### **MPSC 4.4C: International Organization**

Unit-I: Meaning, Nature and Evolution of International Organization  
Its Characteristics and Roles.

Unit-II: The League of Nations: Structure and function; Achievements and failures.

Unit-III: UN: Origin, Structure & Functions; Achievements and Failure; Debates on UN Reforms

Unit-IV: Regional Organisations: Meaning, Scope & Evolution

European Union (EU) South Asian Association for Regional Cooperation (SAARC)  
Association for South East Asian Nations (ASEAN)

Unit-V: UN and Contemporary Global Challenges:

Agenda for Peace; Human Rights; Environment; Millennium Development Goals (MDGs)

Suggested Readings:

1. A.L Bennett A.L (1977) *International organisation: principles and Issues*. Englewood Cliffs, NJ, Prentice hall.
2. Gareis, Sven Bernhard & Varwick, James, *The United Nations: An Introduction*, New York, Palgrave Macmillan.
3. K.P Saxena (1993) *Reforming the United Nations: The Challenges and Relevance*, New Delhi, sage 1993.
4. I. Claude (1971) *Swords into Ploughshares: The Problems and Progress of International Organisation*, New York, Random House.
5. L.B Miller (1967) *World Order and Local Disorder: The UN and International Conflict*, Princeton, NY, Princeton Univ. Press.
6. Luard, Evans, A History of the United Nations, Macmillan, London
7. L.Oppenheim(1919) *The League of Nations and its Problems*, London Longman, 1919.
8. Narasimhan, C.V., *The United Nations: An inside view*, New Delhi, Vikas
9. P.baehr and L. Gorendenker(1992) *The United nations in the 1990s*, London, Oxford Univ.Press.
10. S.S Goodspeed (1967) *The Nature and Functions of International Organisation*, New York, Oxford Univ. Press.
11. Simma, Bruno, *The charter of the United Nations: a commentary*, Oxford University press.
12. Saksena, K.P, *Reforming the United Nations: The challenge of Relevance*, New Delhi, Sage.
13. J. Styoessinger (1965) *The United Nations and the Superpower*, New York, random House 1965.
14. S.J.R Bilgrami (1977) *International Organisation*, New Delhi-Vikas.
15. S.Kumar (ed)(1995) *The United Nations at 50: An Indian view*, Delhi UBSPD.

## **Choice Based Credit Transfer (CBCT)**

(To be opted by students of disciplines other than Political Science)

### **MPST 1.5 Human Rights and Indian Constitution**

#### **UNIT-I**

- a. Human rights: Concept, nature, and significance
- b. Human rights in Indian constitution: nature, scope, objectives, significance and expansion

#### **UNIT-II**

- a. Theoretical foundation of Human rights and Indian Constitutionalism
- b. Democracy and Human rights in India vis-à-vis Universal declaration of Human rights

#### **UNIT-III**

- a. Human rights and Indian Constitution: Civil and political rights
- b. Human rights and Indian constitution: Social, Economic and Cultural rights

#### **UNIT-IV**

- a. Protection and promotion mechanism of human rights in India: Constitutional provisions and judiciary, various commissions (NHRC, SHRC, SC/ST Commission, Women's commission)
- b. Critical Appraisal- success, failures, challenges and remedies

#### **Reading Material:**

1. Agarwal, R.S, Human Rights in the Modern World, chetana Publications, New Delhi, 1979
2. Austin, Granville, The Indian Constitution: Cornerstone of a Nation, Oxford University Press, Bombay, 1966
3. Basu, Durgadas, Human Rights in Constitutional Law, wadhwa and Company, Nagpur, New Delhi, 2003
4. Baxi, Upendra Human Rights in a Post Human World: Critical essays, Oxford University Press, New Delhi, 2007
5. -----The Future of Human Rights, Oxford University Press, New Delhi, 2008
6. Hingorani, R.C, Human Rights in India, Oxford and IBH publishing Company, New Delhi, 1985
7. Iyer, Krishna V.R, Human Rights and Inhuman Wrongs, B.R. Publishing Company, New Delhi, 1990
8. Agarwal, H.O Implementation of Human Rights Covenants with Special Reference to India, Kitab Mahal, Allahabad, 1983

### **MPST 2.5 Political Science: Ideas and Concepts**

#### **UNIT- I:**

- a. Development, nature and Scope of Political Science
- b. Distinction between Political theory, political philosophy and Thought

#### **UNIT-II**

- a. State: theories of origin- social contract, and Marxist theory.
- b. Sovereignty: Concept, definition, meaning and nature, singular and pluralist theory of sovereignty, Austin's Theory of Sovereignty.

#### **UNIT-III**

- a. Power- meaning, nature, scope and types; Authority and Legitimacy: Definition, meaning, nature and Significance.
- b. Citizenship, Rights, Equality, liberty, Justice and Civil Society

#### **UNIT-IV**

- a. Constitutionalism and Development of liberal and Marxist constitution
- b. Democracy: Theories, development, types, modernization, welfare state and theories of social change

#### **Reading Material**

1. Asirvatham, Eddi, Political Theory, S.Chand And Company, New Delhi, 1988.
2. David Held, , Political Theory Today, Policy Press, Cambridge, 1991.
3. Andreq Hacker, Political Theory Macmillan, New York, 1968.
4. M.N. Hagopian, Ideas and Ideaologies, longman, new York, 1985.
5. Leslie Lipson, The Great Issues of Politics, Blackwell, London, 1984.
6. A. Leftwitch, What is Politics, Blackwell, London, 1984.
7. R.M. MacIver, The modern state, OUP, Oxford, 1966.
8. O.P. Gauba, Introduction to Political Theory, Macmillan, Delhi,
9. Sushila Ramaswami, Ideas and Concepts in Politics,
10. Rajeev Bhargava, Political Theory, Pearson, New Delhi,

#### **MPST 3.5: Indian Constitution and its Working**

##### **POL UNIT-I-**

- a. Making of the Indian Constitution and its Sources, Constituent Assembly.
- b. Basic features of the Indian Constitution and problems in Indian politics and society

##### **UNIT-II-**

- a. Role and Working of executive, legislature and Judiciary in the resolution of socio-economic and political problems- an overview
- b. The working of Parliamentary system of government and Judiciary.

##### **UNIT-III-**

- a. Panchayat Raj System and the Introduction of 73rd and 74th Constitutional Amendment for rural and urban development-
- b. Appraisal of the functioning of the Local self governments

##### **UNIT-IV-**

- a. Election commission, CAG, Public Services Commission.
- b. Political Parties, Social movements and Civil Society and their role in Indian politics.

#### **Reading Material.**

1. B.L.Fadia, Indian Governm,ent and Politics, Sahitya Bhavan publications, Agra, 2014.
2. D.D.Basu, Introduction to Constitution of India, Pretence Hall, New Delhi, 1994
3. Rajeev Bhargav (ed)., Ethics and Politics of Indian Constitution, OUP, Delhi
4. G. Austin, The Indian Co0nstitution: Corner Stone of a Nation, OUP, 1966.
5. I. Jennings, Some Characteristics of Indian Constitution, OUP, London, 1953
6. M. V. Paylee, Constitutional Government in India, Asia Publishing House, Bombay

## **MPST 4.5: PRESSURE GROUPS AND SOCIAL MOVEMENTS.**

### **UNIT I**

- a. Pressure Groups and Social Movements: Meaning, nature, and Significance, Group Theories-
- b. Pressure Groups – Evolution, Kinds and Techniques

### **UNIT-II:**

- a. Relationship between Pressure Groups and Political Parties-complementary relationship, cooperation and conflict
- b. Dynamics of Social Movements: Origin, ideology, Objectives, Means and Methods and Constraints

### **UNIT-III**

- a. Social Movements in India- Old (Brahmo samaj, Satyashodhak samaj) and New (Dalit movement, environmental movement and peasant movement)
- b. Social Movements and the Development Process: Change, Progressive legislations and modernization

### **UNIT-IV:**

- a. Pressure Groups, Social Movements and the Democratic Process- Role, Impact and contribution to democratic process
- b. Future of Pressure Groups & Social Movements in Global Perspective: New trends and challenges

### **Reading Material:**

1. G. Almond and G. B. Powell, *Comparative Politics Today: A World View*, 6th edn., New York, Harper Collins, 2000.
2. A. Bentley, *The Process of Government*, Chicago, University of Chicago Press, 1908.
3. P. Brooker, *Twentieth Century Dictatorships: The Ideological One Party States*, Basingstoke, Macmillan, 1995.
4. C. Campbell and G. Wilson, *The End of Whitehall: Death of a Paradigm?* Oxford and Cambridge Massachusetts, Blackwell, 1995.
5. C. Cigler and B. Loomis (eds.), *Interest Group Politics*, 5th edn., Washington 67 DC, Congressional Quarterly Press, 1998.
6. R. A. Dahl, *Who Governs? Democracy and Power in an American City*, New Haven CT, Yale University Press, 1961.
7. ———, *Modern Political Analysis*, 5th edn., Englewood Cliffs NJ, Prentice Hall, 1991.
8. ———, —Pluralism in J. Krieger (ed.), *The Oxford Companion to Politics of the World*, New York and Oxford, Oxford University Press, 1993.
9. R. Dalton, *The Green Rainbow: Environmental Groups in Western Europe*, New Haven CT, Yale University Press, 1994.
10. ——— and M. Kuechler, *Challenging the Political Order: New Social and Political Movements in Western Democracies*, Cambridge, Polity, 1990.
11. ——— and M. Wattenberg, *Politics without Partisans: Political Change in Advanced Industrial Democracies*, Oxford, Oxford University Press, 2000.
12. R. Domoff, *Who Rules America Now? A View for the 1980s*, Englewood Cliffs NJ, Prentice Hall, 1983.
13. I. Duchacek, *Power Maps: The Comparative Politics of Constitutions*, Santa Barbara California, ABC Clio, 1973.



14. A. Escobar and S. Alvarez (eds.), *The Making of Social Movements in Latin America: Identity, Strategy and Democracy*, Boulder Colorado, Westview Press, 1992.
15. R. Hrebenar and R. Scott, *Interest Group Politics in America*, 3rd edn., Englewood Cliffs NJ, Prentice Hall 1997.
16. L. LeDuc, R. Niemi and R. Norris, *Elections and Voting in Global Perspective*, Thousand Oaks California, Sage, 1996.
17. R. Kvavik, *Interest Groups in Norwegian Politics*, Oslo, Bergen and Tromsø, Universitetforlaget, 1976.
18. T. Lowi, *The End of Liberalism*, New York, Norton, 1969.
19. T. Mathews, —Interest Groups in R. Smith and L. Watson (ed.), *Politics in Australia*, Sydney, Allen and Unwin, 1989.
20. S. Mazey and J. Richardson (eds.), *Interest Inter-Mediation and the EU*, London and New York, Routledge, 1998
21. D. McKay, *American Politics and Society*, 4th edn., Oxford, and Cambridge Massachusetts, Blackwell, 1997.
22. T. Moe, *The Organization of Interests*, Chicago, University of Chicago Press, 1980.
23. M. Olson, *The Logic of Collective Action: Public Goods and the Theory of Groups*, New York, Schoken Books, 1968.
24. J. Richardson (ed.), *Pressure Groups*, Oxford and New York, Oxford University Press, 1993.
25. W. Riker, *The Theory of Political Coalitions*, New Haven CT, Yale University 68

**POST GRADUATE  
DEPARTMENT OF SOCIOLOGY  
UGC COURSE BASED CREDIT SYSTEM (CBCS)**

**ST. JOSEPH'S COLLEGE (AUTONOMOUS)  
JAKHAMA, NAGALAND**

## DETAILS OF COURSES UNDER PG (SOCIOLOGY)

1. CORE COURSE: 14 Courses(compulsory) - 4 credits each
2. ELECTIVE COURSE: 6Courses (choose any one) – 4 credits each
3. CHOICE BASED CREDIT TRANSFER: 4courses- 3 credits each

### Core Courses

	<b>Course Code</b>
1. Classical Sociological Theories	MSOC 1.1
2. Sociology of India	MSOC 1.2
3. Research Method-I	MSOC 1.3
4. Sociology of Family, Marriage and Kinship	MSOC 1.4
5. Modern Sociological Theories	MSOC 2.1
6. Sociology of Social Movement	MSOC 2.2
7. Research Method-II	MSOC 2.3
8. Political Sociology	MSOC 2.4
9. Sociology of Gender	MSOC 3.1
10. Economic Sociology	MSOC 3.2
11. Diaspora Study	MSOC 3.3
12. Sociology of Religion	MSOC 4.1
13. Environmental Sociology	MSOC 4.2
14. Sociology of North East India	MSOC 4.3

### Elective Courses

1. Feminist Sociology	MSOC 3.4A
2. Crime and Society	MSOC 3.4B
3. Sociology of Globalization	MSOC 3.4C
4. Sociology of Education	MSOC 4.4A
5. Sociology of Health and Illness	MSOC 4.4B
6. Project Work	MSOC 4.4C

### Choice Based Credit Transfer (CBCT)

1. Peace and Conflict Studies	MSOT 1.5
2. Sociology of Disaster and Disaster Planning	MSOT 2.5
3. Social Stratification and Mobility	MSOT 3.5
4. Population and Society	MSOT 4.5

**Department of Sociology**  
**St. Joseph's College (Autonomous), Jakhama**

**Course Structure and Syllabus for PG Sociology Programme**

Credits to be completed for award of the degree: 76 Minimum  
 duration: 4 Semesters (Two years) Maximum Duration: 6  
 Semesters (Three years)

**COURSE STRUCTURE**

**Semester I**

**Total Credits: 16+3=19**

Course Code	Course Name	L+T+P	CH	CR	Course Type	Skill Based Course YES/ NO
MSOC 1.1	Classical Sociological Theories	3-1-0	4	4	Core	No
MSOC 1.2	Sociology of India	3-1-0	4	4	Core	No
MSOC 1.3	Research Methodology-1	3-1-0	4	4	Core	No
MSOC 1.4	Sociology of Family, Marriage and Kinship	3-1-0	4	4	Core	No
MSOT 1.5	Peace and Conflict Studies	2-1-0	3	3	CBCT	No

**Semester II**

**Total Credits: 16+3=19**

Course Code	Course Name	L+T+P	CH	CR	Course Type	Skill Based Course YES/NO
MSOC 2.1	Modern Sociological Theories	3-1-0	4	4	Core	No
MSOC 2.2	Sociology of Social Movement	3-1-0	4	4	Core	No
MSOC 2.3	Research Methodology-II	3-1-0	4	4	Core	No
MSOC 2.4	Political Sociology	3-1-0	4	4	Core	No
MSOT 2.5	Sociology of Disaster	2-1-0	3	3	CBCT	No

**Semester III****Total Credits: 16+3=19**

Course Code	Course Name	L+T+P	CH	CR	Course Type	Skill Based Course YES/ NO
MSOC 3.1	Sociology of Gender	3-1-0	4	4	Core	No
MSOC 3.2	Economic Sociology	3-1-0	4	4	Core	No
MSOC 3.3	Diaspora Study	3-1-0	4	4	Core	No
MSOC 3.4A	Feminist Sociology	3-1-0	4	4	Elective	No
MSOC 3.4B	Crime and Society	3-1-0	4	4	Elective	No
MSOC 3.4C	Sociology of Globalization	3-1-0	4	4	Elective	No
MSOT 3.5	Social Stratification and Mobility	2-1-0	3	3	CBCT	No

**Semester IV****Total Credits: 16+3=19**

Course Code	Course Name	L+T+P	CH	CR	Course Type	Skill Based Course yes/no
MSOC 4.1	Sociology of Religion	3-1-0	4	4	Core	No
MSOC 4.2	Environmental Sociology	3-1-0	4	4	Core	No
MSOC 4.3	Sociology of North East India	3-1-0	4	4	Core	No
MSOC 4.4A	Sociology of Education	3-1-0	4	4	Elective	No
MSOC 4.4B	Sociology of Health and Illness	3-1-0	4	4	Elective	No
MSOC 4.4C	Project Work	3-1-0	4	4	Elective	No
MSOT 4.5	Population and Society	2-1-0	3	3	CBCT	No

*\*L- Lecture, T- Tutorial, P- Practical, CH- Class Hours, CR- Credit*

**Core Course  
Semester I**

**MSOC 1.1 Classical Sociological Theories**

**Objectives:**

This course focuses on the emergence of sociology as a scientific discipline and introduces the ideas of the pioneers of the discipline who are also generally considered as the classical thinkers in Sociology. Thus, it is designed to acquaint the students with the seminal theoretical and methodological ideas developed by these thinkers in the understanding of the social phenomena and intends to give the student groundings in sociological theories which could help them to correlate with various social processes, sociological perspectives and theories to be taught in subsequent courses.

**I. The Development of Sociology**

- a) Historical background and emergence of sociology.
- b) Natural Science and Social Science.
- c) Social context and Intellectual thought.
- d) Critique of classical traditions: Colonialism, Race and Gender.

**II. Karl Marx**

- a) Dialectical Materialism.
- b) Critical debate on Base and Superstructure.
- c) Capitalism: Origin, Development and Alienation.
- d) Class and Class Conflict.

**III. Max Weber:**

- a) Interpretive Sociology.
- b) Social Action: Basic Concepts and Terms.
- c) Methodologies of the Social Sciences.
- d) Protestant Ethic and the Spirit of Capitalism.

**IV. Emile Durkheim**

- a) Rules of Sociological Method.
- b) The Division of Labour and Forms of Solidarity.
- c) Suicide.
- d) Religion and Society.

**Suggested Readings:**

1. Abrams, P. 1968. *The Origins of British Sociology*. Chicago: University of Chicago Press.
2. Appelrouth & Edles. 2008. *Classical & Contemporary Sociological Theory*. Thousand Oaks: Pine Forge Press.
3. Durkheim, Emile. 1982. *The Rules of Sociological Method*. London: Macmillan.
4. \_\_\_\_\_ 1933. *The Division of Labour in Society*. Glencoe: The Free Press.
5. Durkheim, Emile and Marcel Mauss. 1969. *Primitive Classifications*. London: Cohen & West.
6. Girth & Mills. 1958. *Essays in Sociology: from Max Weber*. NY: Galaxy Books.
7. Nisbet, R.A. 1967. *The Sociological Tradition*. London: Heinemann.
8. Ritzer, George. 2008: *Sociological Theory*. N.Y.: McGraw –Hill, Chapter 1-4.
9. Marx, Karl. 1964. *Pre-capitalist Economic Formations*. London: Lawrence and Wishart.
10. \_\_\_\_\_ 1954. *Capital - Vol. I*. Moscow: Progress Publishers. (Chapter 1, 10 and 14).
11. \_\_\_\_\_ 1924. *The Class Struggle in France (1848-1850)*. New York: New York Labour News.
12. Marx, Karl and Friedrich Engels. 1976. *The Manifesto of the Communist Part, in Marx & Engels Collected Works - Vol. 6*. London: Lawrence and Wishart.
13. Weber, Max. 1978. *Economy and Society: An outline interpretative sociology* (edited by G. Roth and C. Wittich)-Vol. 1. Berkeley: University of California Press. (Part- I, Chapters 1,2).
14. Weber, Max. 1949. *The Methodology of the Social Sciences*. New York: Free Press.
15. \_\_\_\_\_ 2002. *The Protestant Ethic and the Spirit of Capitalism*. Los Angeles: Blackwell Publishers.

## MSOC 1.2: SOCIOLOGY OF INDIA

### Objective:

This course aims to provide a comprehensive understanding of Indian society in its multi-faceted dimensions. The first two sections focus on the institutional framework within which sociology developed in India along with an understanding of the approaches. The later sections attempt to acquaint the students to the continuities and contradictions in Indian society by mapping the current debates in Indian sociology and analyzing the dynamics in the contemporary India.

### I. Formation of Sociology in India

- a) Colonialism, Anthropology, Sociology
- b) Sociology in India and Sociology for India
- c) Text view and Field view of Indian Sociology
- d) Indian Sociology in crisis

### II. India as an 'Object' of study

- a) Colonial, Nationalist, Indological (Ghurye)
- b) Structural-Functional (M. N. Srinivas)
- c) Dialectical (A. R. Desai)
- d) Subaltern (R. Guha)

### III. Debates on Indian Society

- a) Social Institutions – Family and Household, Kinship and Marriage,
- b) Social Hierarchy – Caste, Class, and Gender.
- c) Village as the nucleus of Indian society
- d) Secularism and Communalism

### IV. Understanding Modernity in Indian Society

- a) Indigenization
- b) Moving beyond tradition vs modernity debate
- c) Identity, Politics and State
- d) Modernity in Indian homes: Leisure, Autonomy and the New Woman in India.

### Suggested Readings:

1. Beteille, Andre. 2002. *Sociology: Essays on Approach and Method*. New Delhi: Oxford University Press.
2. Breman, Jan, Kloos Peter and Ashwini Saith. 1997. *The Village in Asia Revisited*. New Delhi: Oxford University Press.
3. Dahiwale, S. M (ed.). 2004. *Indian Society: Non-Brahmanic Perspectives*. New Delhi: Rawat Publications.
4. Das, Veena. 2003. *The Oxford Companion to Sociology and Social Anthropology, Vol. I and II*. New Delhi: Oxford University Press.
5. \_\_\_\_\_ 1995. *Critical Events: An Anthropological Perspective on Contemporary India*. New Delhi: Oxford University Press.
6. Dhanagare, D.N. 1999. *Themes and Perspectives in Indian Sociology*. New Delhi: Rawat Publications.
7. Deshpande, Satish. 2003. *Contemporary India: Sociological Perspectives*. New Delhi: Penguin Books.
8. Dube, S. C. 1990. *Indian Society*. New Delhi: National Book Trust.
9. Guha, R. 1998. *A Subaltern Studies Reader*. New Delhi: Oxford University Press.
10. Khilnani, Sunil. 1999. *The Idea of India*. New Delhi: Penguin Books.
11. Omvedt, Gail. *Dalits and Democratic Revolution*. New Delhi: Sage Publications.
12. Srinivas, M.N. 2002. *Collected Essays*. New Delhi: Oxford University Press.
13. Vivek, P. S. 2002. *Sociological Perspectives and Indian Sociology*. Mumbai: Himalaya Publishing House.

## MSOC 1.3: Research Methodology-I

### Objective:

The course provides an exposure to the fundamentals of social science research methodology. It begins with a discussion on some important philosophical ideas underlying the emergence of different methodologies in social sciences and continues with the essential aspects of social science research. Besides sensitizing the students to the relationship between theory and research, this course aims to familiarise the students to the different approaches in understanding and explaining social phenomena and the predicaments that entails social science research.

### I. Philosophical Foundation of Social Research

- a) Enlightenment.
- b) Cartesian Philosophy.
- c) Ontology and Epistemology in social science.
- d) Classical Debates: Positivism vs Hermeneutics (Durkheim vs Weber), Verification vs Falsification (Kuhn vs Popper)

### II. Fundamental Aspects of Research

- a) Types and stages of Research
- b) The Role of social science research and the researcher in society: problems of social science research in India
- c) Assumptions of quantification: Measurement and Scaling
- d) Social Survey and its limitations

### III. Scientific Study of Social Phenomena

- a) Problems of Subjectivity and Objectivity.
- b) Ethical Issues in Social Research, Reliability and validity in social research
- c) Logic of inquiry
- d) Methodological Debates in India: Sociology vs Indology (Dumont vs Bailey), Structural Functional vs Historical (M.N Srinivas vs A.R Desai).

### IV. Some Approaches to Social Reality

- a) Comte's Notion of Positivism, Vienna's Circle Positivism
- b) Existential Phenomenology and Ethnomethodology
- c) Hermeneutics and Critical theory: Gadamer, Apel, Habermas
- d) Post-Structuralism and Post Modernism: Levis Strauss and Derrida/ Foucault

### Suggested Readings

1. Babbie, E.R. 2010. *The Practice of Social Research* (12<sup>th</sup> edition). USA: Wadsworth: Cengage Learning.
2. Beteille, A. and T. N. Madan. 1974. *Encounter and Experience: Personal Accounts of Fieldwork*. New Delhi: Vikas Publishing House Pvt. Ltd.
3. Bryman, A. 1988. *Quality and Quantity in Social Research*. London: Unwin Hyman.
4. Durkheim, E. 1958. *The Rules of Sociological Method*. New York: The Free Press.
5. Geertz, C. 1973. *Interpretation of Cultures*. New York: Basic Books.



6. Gouldner, A. 1970. *The Coming Crisis of Western Sociology*. New York: Basic Books.
7. Guthrie, G. 2010. *Basic Research Methods: An Entry to Social Science research*. New Delhi: Sage.
8. Hughes, J. 1987. *The Philosophy of Social Research*. London: Orient Longman.
9. Kuhn, T. S. 1970. *The Structure of Scientific Revolutions*. London: The University of Chicago Press.
10. Malcolm, W. and T. May. 1996. *Introduction to the Philosophy of Social Research*. London: Routledge.
11. Marx, K. 1974. *Grundrisse: Foundations of the Critique of Political Economy*. London: Penguin Books in association with New Left Review, Forward and Introduction.
12. Merton, R. K. 1972. *Social Theory and Social Structure*. Delhi: Arvind Publishing House.
13. Miles, M. and A. Huberman. 1994. *Qualitative Data Analysis: an Expanded Source Book*. London: Sage.
14. Mukherjee, P.N. (Ed.). 2000. *Methodology in Social Research: Dilemmas and Perspectives*. New Delhi: Sage.
15. Myrdal, G. 1970. *Objectivity in Social Research*. London: Gerald Duckworth.
16. Neuman, W.L. 2006. *Social Research Methods: Quantitative and Qualitative Approach*. New Delhi: Pearson Education India.
17. Popper, K. 1999. *The Logic of Scientific Discovery*. London: Routledge.
18. Sjoberg, G. and R. Nett. 1997. *Methodology for Social Research*. Jaipur: Rawat.
19. Srinivas, M.N. and A.M. Shah. 2010. *Field Worker and the Field*. New Delhi: Oxford University Press.
20. Vaus, D.A. 1986. *de Surveys in Social Research*. London: George Relen and Unwin Hughes.
21. Weber, M. 1949. *The Methodology of the Social Sciences*. New York: The Free Press.

## MSOC 1.4: Sociology of Family, Marriage and Kinship

### Objective:

This course introduces the students to the universally acknowledged social importance of family, kinship and marriage. This course will familiarize the students with the key ideas and concepts of family, kinship and marriage and looks into the different approaches, issues and debates in studies of family, kinship and marriage so as to help the students to understand the dynamics of these institutions in the contemporary society.

### I. Family

- a) Nature, types and household.
- b) Family in India, regional diversities.
- c) Changing Family Forms, Relationships and structure: Single Parents, Cohabitation, same sex couples, surrogacy and Adoption, unmarried individuals.
- d) Theoretical analysis of the family: Structural-functional, conflict and symbolic-interactionist analysis.

### II. Marriage

- a) Rules of Marriage: Exogamy and Endogamy.
- b) Marriage as an expression of exchange and alliance, bride-wealth, dowry and weddings.
- c) Sexuality, Marriage and Remarriage: A case of Levirate in India.
- d) Divorce as an institution.

### III. Kinship

- a) The formation of kinship as an object of study, the incest taboo.
- b) Concept of kinship: double, Bilateral, Cognatic descent, residence and inheritance.
- c) Evolution of Kinship Studies: Structural-Functionalism, Alliance Theory, Feminist Anthropology.
- d) Kinship system in tribal societies.

### IV. A Study of Texts: (Subject to modification)

- a) The Hindu Householder: Family and Kinship- A Study of The Pandits of Rural Kashmir by T.N. Madan
- b) Caste, Marriage and inequality: Studies from North and South India by Pauline Kolenda.
- c) Families We Choose: Lesbians, Gays, Kinship by Weston Kath
- d) African System of Kinship and Marriage by A. R Radcliffe Brown

### Suggested Readings:

1. Bhandari, J.S. (Ed.). 1996. *Family and Kinship in Northeast-East India*. Delhi: Vedam Books.
2. Bourdieu, P. 1977. *Outline of a Theory of Practice*. Cambridge: Cambridge University Press.
3. Carsten, J. (Ed.). 2000. *Cultures of Relatedness: New Approaches to the Study of Kinship*. Cambridge: Cambridge University Press.
4. Engels, F. 1948. *The Origins of the Family, Private Property and the State*. Moscow: Progress Publishers.
5. Fox, R. 1984. *Kinship and Marriage: An Anthropological Perspective*. Cambridge: Cambridge University Press
6. Goody, J. (Ed.). 1958. *Developmental Cycle in Domestic Groups*. Cambridge: Cambridge University Press.

7. Goody, J. & S.J. Tambiah. 1975. *Bride-wealth and Dowry*. Cambridge: Cambridge University Press.
8. Graburn, N. (Ed.). 1971. *Readings in Kinship and Social Structure*. Harper and Row.
9. Kath, Weston. 1991. *Families we Choose: Lesbians, Gays, Kinship*. New York: Columbia University Press.
10. Kolenda, P. 1987. *Regional Differences in Family Structure in India*. Jaipur: Rawat Publications.
11. Levi-Strauss, C. 1969. *The Elementary Structure of Kinship*. London: Eyre and Spottiswoode.
12. Madan, T.N. 2001. *Family and Kinship: A Study of the Pandits of Rural Kashmir* (2<sup>nd</sup> edition). London: Oxford University Press.
13. Murdock, G.P. 1965. *Social Structure*. New York: Free Press.
14. Parkin, D. and Davin Nyamwaya (Ed.). 1987. *Transformations of African Marriage*, Manchester: Manchester University Press.
15. Parkin, R. and L. Stone (Ed.). 2000. *Kinship and Family: An Anthropological Reader*. U.S.A.: Blackwell.
16. Radcliffe-Brown, A. R. (Ed.). 1950. *African Systems of Kinship and Marriage*. London: Oxford University Press.
17. Robertson, A.F. 1991. *Beyond the Family: Social Organisation of Human Reproduction*. U.S.A.: University of California Press.
18. Schneider, D. M. 1968. *American Kinship: A Cultural Account*. New Jersey: Prentice-Hall.
19. Shah, A. M. 1973. *Household Dimensions of the Family in India*. New Delhi: Orient Longman.
20. Shah, A. M. 1998. *The Family in India: Critical Essays*. New Delhi: Orient Longman.
21. Strathern, M. 1992. *After Nature: English Kinship in the Late Twentieth Century*. Cambridge: Cambridge University Press.
22. Trautmann, T.R. 1981. *Dravidian Kinship*. Cambridge: Cambridge University Press.
23. \_\_\_\_\_ 1987. *Lewis Henry Morgan and the Invention of Kinship*. Berkeley: University of California Press.
24. Uberoi, P. 1993. *Family, Kinship and Marriage in India*. New Delhi: OUP.

## SEMESTER II

### MSOC 2.1: Modern Sociological Theories

#### Objective:

This course traces the development of modern sociological theory broadly from Parsons to Bourdieu. It would orient the students about the theoretical perspectives such as functionalism, neo-functionalism, interactionist, dramaturgical and post-structuralism perspectives to understand the social phenomena.

#### I. Functionalism and Neo-Functionalism

- a) Parsonian Structural-functionalism.
- b) Merton and Middle-range theory; revision of functional analysis.
- c) Jeffrey Alexander and Contemporary Neo-functionalism.
- d) Functional Dimension of Social system: Talcott Parson

#### II. Reactions to Functionalism

- a) C. Wright-Mills, Alvin Gouldner and the critique of functionalism
- b) Ralf Dahrendorf, Lewis Coser and the theory of social conflict
- c) George Homans, Peter Blau and Exchange Theory
- d) G.H Mead: Symbolic Interaction

#### III. Interpretive Sociology

- a) The Chicago School: G.H. Mead and Symbolic Interactionism.
- b) Harold Garfinkel and Ethnomethodology.
- c) Erving Goffman and Dramaturgical theory.
- d) Alfred Schutz, Phenomenology and Social Constructionism.

#### IV. Contemporary Trends

- a) Pierre Bourdieu – Integrative sociology
- b) Michel Foucault- Post structuralism
- c) Bruno Latour-Actor network theory
- d) Post-colonial theory and the critique of Eurocentrism

#### Suggested Readings:

1. Alexander, Jeffrey C. (Ed.). 1985. *Neo-functionalism*. London: Sage.
2. Althusser, L. 1971. *Lenin and Philosophy and Other Essays*. New York: Monthly Review Press.
3. Appelrouth, Scott and Edles, D. 2008. *Classical and Contemporary Sociological Theory: Text and Readings*. California: Pine Forge Press.
4. Bourdieu, Pierre. 1990. *In Other Words: Essays Towards a Reflexive Sociology*. Oxford: Polity Press.
5. Connerton, Paul. Ed. 1976. *Critical Sociology*. Harmondsworth: Penguin.
6. Dahrendorf, Ralf. 1979. *Class and Class Conflict in Industrial Society*. London: Routledge and Kegan Paul.
7. Giddens, Anthony. 2004. *In Defense of Sociology*. Cambridge: Polity Press.

8. Giddens,Anthony and Turner,J.H.(Ed.).1987. *Social Theory Today*.Cambridge:Polity Press.
9. Gouldner,Alvin. 1971. *The Coming Crisis of Western Sociology*. London: Heinemann.
10. Gramsci,Antonio.1971.*Selections from the Prison Notebooks*.London:Lawrenceand Wishart.
11. Luckmann,Thomas.(Ed.) 1978. *Phenomenology and Sociology: Selected Readings*. New York: Penguin Books.
1. 12. Mennell, Stephen. 1980. *Sociological Theory: Uses and Unities*. Surrey: Thomas Nelson and Sons, 2<sup>nd</sup>Edition.
13. Merton, Robert K. 1968. *Social Theory and Social Structure*. New York: Free Press.
14. Parsons, Talcott et al. 1965. *Theories of Society: Foundations of Modern Sociological Theory*. New York: Free Press.
15. Rabinow, Paul. (Ed.). 1986. *The Foucault Reader*. Harmondsworth: Penguin.
16. Ritzer, George. (Ed.). 2007. *The Blackwell Encyclopedia of Sociology*. Oxford: Blackwell.
17. Seidman, Steven and Alexander, J.C. (Ed.).2001. *New Social Theory Reader: Contemporary Debates*. London: Routledge.
18. Skinner, Quentin. (Ed.). 1990. *The Return of Grand Theory in the Human Sciences*. Cambridge: Cambridge University Press.
19. Smith, Dorothy E. 1999. *Reading the Social: Critique, Theory and Investigations*. Toronto: University of Toronto Press.
20. Wright Mills, C. 1959. *The Sociological Imagination*. New York: Oxford University Press.

## MSOC 2.2: Sociology of Social Movements

### Objectives

This course introduces the students to the collective efforts of people to bring change and transformation in human society. It appraises the students to the various frameworks, concepts and theories developed by sociologists and other social scientists for understanding the nature and dynamics of social movements; and to do so explore the actual empirical cases of social movements in the Indian Context and the global context.

#### I. Social Movement

- a) Meaning and concept: Conceptual problems in the study of social movement
- b) Types of Social Movements
- c) Resource Mobilization Theory
- d) Contribution of Habermas and Bourdieu

#### II. Theories of Social Movements

- a) Relative Deprivation and Reference Group theory
- b) Rational Action Theory
- c) Contribution of Herbert Blumer and Neil J. Smelser
- d) Marxian and Post Marxian Approaches

#### III. Social Movements in Independent India (Subjected to modification)

- a) Peasant Movements
- b) Naga Movement
- c) Assam Movement
- d) Tribal movement: Case of Santhal movement

#### IV. New Social Movements

- a) Ecological/Environmental
- b) Feminist Movement
- c) Peace Movement
- d) Movement against Mega dams: Narmada

### Suggested Readings:

1. Buechler, Steven. 2011. *Understanding Social Movements*. London: Paradigm Publisher.
2. Buechler, Steven. 2000. *Social Movements in Advanced Capitalism*. New Delhi: Oxford University Press.
3. Dhanagare D.N. 1988. *Peasant Movements in India*. New Delhi: Oxford, New Delhi.
4. Meyer, David S., Nancy Whittlev and Belinda Robnett. 2002. *Social Movements*. New York: Oxford.
5. Oommen, T. K. 2010. *Social Movements in Independent India, Vol.I and II*. New Delhi: Oxford University Press.
6. Oommen, T. K. 2004. *Nation, Civil Society and Social Movements*. Delhi: Sage Publications.
7. Parta, Donatella Della and Mario Diani. 2006. *Social Movements: An Introduction*. New York: Blackwell Publishing.
8. Petras, James and Henry Vettmeyer. 2005. *Social Movements and State Power*. London: Pluto Press.
9. Shah, Ghanshyam. 2004. *Social Movements in India*. New Delhi: Sage.
10. Shah, Ghanshyam. 2002. *Social Movements and the State*. New Delhi: Sage Publications
11. Rao, M.S.A. 1978. *Social Movements in India, Vol.I and II*. Delhi: Manohar.

## MSOC 2.3: Research Methodology - II

### Objectives:

The aim is to enable students to frame a Research Design, formulate research problem, fashion appropriate methods to address it, and derive relevant conclusions. The course is designed to familiarise the students with methodological tools and statistical techniques, explaining quantitative and qualitative methods, which will help them to undertake empirical research independently.

### I. Research Design

- a) Types of Research Design: Quantitative and Qualitative
- b) Formulation of Research Design in quantitative study: Experimental, cohort, cross-section, longitudinal and case control studies
- c) Designing Qualitative Research Proposal
- d) Recent debates: Combining Quantitative and Qualitative methodology, Triangulation.

### II. Quantitative Research Methods and Analysis

- a) Data Collection and issues of Validity and reliability
- b) Sampling
- c) Tabulation and Cross Tabulation
- d) Measures of Location, Measures of Dispersion and Variability: Correlation, Statistical Inferences, Test of Hypothesis

### III. Qualitative Research Methods and Analysis

- a) Ethnography
- b) Oral History
- c) Interviews
- d) Case Studies
- e) PRA (Participatory Rural Appraisal)
- f) Historical and feminist method
- g) Analysing Qualitative Data: aspect of representation and credibility

### IV. Applied social research and research writing

- a) Applications of computers in social research
- b) Action (Applied) research, Participatory research: Participatory Rural Appraisal
- c) Data Processing and Analysis
- d) Interpretation and report writing

### Suggested Readings:

1. Agresti, A. and B. Finley. 1997. *Statistical Methods for the Social Sciences*. United States: Prentice Hall and Pearson Publishing.
2. Barrier, N.G. Barrier (Ed.). 1981. *The Census in British India*. Delhi: Manohar Publishers.
3. Bernard, H. (Ed.). 1998. *Handbook of Methods in Cultural Anthropology*. New York: Sage Publications.
4. Carr, E.H. 1961. *What is History?* London: Penguin Books
5. Ehrenberg, A.S.C. 1975. *Data Reduction*. USA: Wiley Inter-science
6. Epstein, A. L and M.N. Srinivas. 1978. *The Craft of Social Anthropology*. New York: Transaction Publishers.
7. Morphy, Howard and Morgan Perkins (Eds.). 2006. *The Anthropology of Art. A Reader*. Oxford: Blackwell.
8. Perks, Robert and Alistair Thomson (Eds.). 1998. *The Oral History Reader*. United States: Routledge
9. Sayer, Andrew. 1992. *Method in Social Science (revised 2<sup>nd</sup> edition)*. United States: Routledge.
10. Srinivas, M.N. and M.N. Panini. 2002. *Collected Essays*. United Kingdom: Oxford University Press.

## MSOC 2.4: Political Sociology

### Objectives:

This course aims to acquaint the students with the major concepts, theoretical approaches and perspectives of political sociology. It seeks to prepare the students to apply these concepts and approaches to the understanding of the nature of the political processes and institutions in India.

### I. Introduction: Basic Concepts

- a) Emergence and subject matter of political sociology
- b) Nature and scope of political sociology
- c) Sociology of politics and politics of sociology
- d) Power, Authority, State, Civil Society

### II. Theories

- a) Perspectives on Power: Weberian, Functionalist, Marxist
- b) Perspectives on State: Liberal, Pluralist, Marxist, Power-elite,
- c) Post-modernist New Political sociology
- d) Bureaucracy: A boon/ a bane for political development with special reference to India.

### III. Political Parties

- a) Political parties: characteristics and social composition
- b) Pressure groups and Interest groups: characteristics and political significance
- c) Local structures of Power: Varieties of local power structure, relationship with the wider political system
- d) Political process in India: Role of caste, religion in Indian politics

### IV. Society and Polity in India

- a) State and nation building in India
- b) Politics of caste, religion, ethnicity, language and region
- c) Majoritarianism and Minoritarianism
- d) Role of Regionalism and language in Indian politics

### Suggested Readings:

1. Bendix, R. and S. M. Lipset (Eds.). 1966. *Class, Status and Power*. London: RKP.
2. Bhargava, R. 1999. *Secularism and its Critics*. New Delhi: Oxford University Press.
3. Bottomore, T. 1966. *Elites and Society*. Harmondsworth: Penguin Books.
4. Chakravarty, A. 1975. *Contradiction and Change*. Delhi: OUP.
5. Dahl, R. 1961. *Who Governs?* New Haven: Yale University Press.
6. Desai, A.R. 2000. *State and Society in India: Essays in Dissent*. Bombay: Popular Publication.
7. Eisenstadt, S.N. (Ed.). 1971. *Political Sociology: A Reader*. NY: Basic Books.
8. Gerth, H.H. and C.W. Mills (Eds.). 1948. *From Max Weber: Essays in Sociology*. London: RKP.
9. Gupta, D. 2004. *Political Sociology in India: Contemporary Trends*. Delhi: Orient Blackswan.
10. Key, V.O. 1964. *Politics, Parties and Pressure Groups*. NY: Crowell.



11. Kohli, A. 1990. *India's Democracy: An Analysis of Changing State-Society Relations*. Princeton: Princeton University Press.
12. Kohli, A. 1999. *The State and Poverty in India: The Politics of Reform*. Cambridge: Cambridge University Press.
13. Kothari, R. 2008. *Caste in Indian Politics*. Delhi: Orient Blackswan.
14. Laclau, E. 2012. *Politics and Ideology in Marxist Theory*. London: Verso.
15. Miller, D. 1995. *On Nationality*. Oxford: Clarendon Press.
16. Mills, C.W. 2000. *The Power Elite*. NY: OUP.
17. Nash, K. 2000. *Contemporary Political Sociology*. Massachusetts: Blackwell Publishers.
18. Robinson, M. S. 1988. *Local Politics: The Law of the Fishes*. Delhi: OUP.
19. Runciman, W.G. 1969. *Social Science and Political Theory*. Cambridge: Cambridge University Press.
20. Taylor, G. 2010. *The New Political Sociology: Power, Ideology and Identity in an Age of Complexity*. London: Palgrave Macmillan.
21. Vora, R. and S. Palshikar (Ed.). 2004. *Indian Democracy*. Delhi: Sage Publications.
22. Weber, M. 1978, *Economy and Society*. Berkeley: University of California Press.

## SEMESTER III

### MSOC 3.1: Sociology of Gender

#### Objectives

This course aims at introducing students to the major concepts and theoretical perspectives of sex-gender systems and practices. This course also aims at giving a comprehensive study on the origin of feminist ideology and their changing nature and addresses specific issues concerning gender relations in the Indian context in their structural forms and representations.

#### I. Gender in Sociological Analysis

- a) Approaches to the Study of Gender
- b) Socialization: Gender identity and gender roles
- c) Patriarchy, private and public dichotomy
- d) Gender Studies as a Critique of Ethnography and Theory

#### II. Reproduction, Sexuality and Ideology

- a) Social construction of gender
- b) Divergent views associated to sex and sexuality
- c) Sexual inequality in various societies
- d) Life cycle

#### III. Family, Work and Property

- a) Production and Reproduction
- b) Work and Property
- c) Family and Household
- d) Woman and Property rights

#### IV. The Politics of Gender

- a) Complementarity, Inequality, Dependence, Subordination
- b) Feminist Theories and Feminist Politics
- c) Women and Personal Laws: Muslim and Christian Personal Laws
- d) Hindu code Bill

#### Suggested Readings:

1. Ardener, E. 1975. "Belief and the Problem of Women" and "The Problem Revisited", in S. Ardener (ed.), *Perceiving Women*. London: Malaby Press.
2. Barrett, M. 1980. *Women's Oppression Today*. London: Verso. (Chapters 1 to 4, and 6).
3. Boserup, E. 1974. *Women's Role in Economic Development*. New York: St. Martin's Press. (Part I).
4. De Beauvoir, S. 1983. *The Second Sex*. Harmondsworth: Penguin. (Book Two).
5. Douglas, M. 1970. *Purity and Danger*. Harmondsworth: Penguin. (Chapter 9).
6. Engels, F. 1972. *The Origin of the Family, Private Property and, the State*. London: Lawrence and Wishart.
7. Hershman, P. 1977. "Virgin and Mother" in I.M. Lewis (Ed.). *Symbols and Sentiments: Cross-Culture Studies in Symbolism*. London: Academic Press.
8. Hirschon, R. 1984. "Introduction: Property, Power and Gender Relations" in R. Hirschon (ed.). *Women and Property. Women as Property*. Beckenham: Croom Helm.
9. Jaggar, A. 1983. *Feminist Politics and Human Nature*. Brighton: The Harvester Press.

10. Leacock, E. 1978. "Women's Status in Egalitarian Societies: Implications for Social Evolution", *Current Anthropology*, 19(2), pp.247-75.
11. MacCormack, C. and M.Strathern (Ed.). 1980. *Nature, Culture and Gender*. Cambridge: Cambridge University Press. (Chapter I).
12. Mead, M. 1935. *Sex and Temperament in Three Primitive Societies*. New York: William Morrow.
13. Meillassoux, C. 1981. *Maidens, Meals and Money*. Cambridge: Cambridge University Press, (Part I).
14. Reiter, R. R. (Ed.). 1975. *Towards an Anthropology of Women*. New York: Monthly Review Press. (Articles by Draper and Rubin; other articles may be used for illustration).
15. Rogers, S.C. 1975. "Female Forms of Power and the Myth of Male Dominance: A Model of Female/Male Interaction in Peasant Societies". *American Ethnologist*, 2(4), pp.727-56.
16. Rosaldo, M.Z. and L. Lamphere (Ed.). 1974. *Women, Culture and Society*. Stanford: Stanford University Press. (Articles by Rosaldo, Chodorow, Ortner; other articles may be used for illustration).
17. Sharma, U. 1980. *Women, Work and Property in North West India*. London: Tavistock.
18. Uberoi, J.P.S. 1961. "Men, Women and Property in Northern Afghanistan" in S.T. Lokhandawala (ed.), *India and Contemporary Islam*. Simla: Indian Institute of Advanced Study, pp.398-415.
19. Vatuk, S. 1982. "Purdah Revisited: A Comparison of Hindu and Muslim Interpretations of the Cultural Meaning of Purdah in South Asia", in H. Papanak and G. Minault (eds.). *Separate World: Studies of Purdah in South Asia*. Delhi: Chanakya.
20. Yalman, N. 1963. "On the Purity of Women in the Castes of Ceylon and Malabar", *Journal of the Royal Anthropological Institute*, pp. 25-58.
21. Young, K. C. Wolkowitz and R. McCullagh (eds.). 1981. *Of Marriage and the Market: Women's Subordination in International Perspective*. London: CSE Books. (Articles by O. Harris, M. Molyneux).

## MSOC 3.2: Economic Sociology

### Objectives

This course introduces the students to the conceptual underpinnings of economic sociology and its significance. It discusses the processes of economic production in different social formations and the relevance of the sociological approaches in understanding these processes. The course also exposes the students to the emerging perspectives in economic sociology as well as the inter-connectedness between economy and society in the areas of development and globalization in contemporary times.

#### I. Introduction to Economic Sociology

- a) Origin and development of Economic institutions: Features of primitive and modern economies
- b) Sociological aspect of economic life- Max Weber and Emile Durkheim
- c) Concepts of value, labour, property, money and rationality
- d) Economic Growth and development: Human development, sustainable development and social development.

#### II. Societies: Production and Reproduction

- a) Tribal and Peasant societies: Production, Distribution and Exchange
- b) The Production Process: The Structure and Experience of Work.
- c) Structural change associated with development
- d) Culture and development

#### III. Consumption and Exchange:

- a) Gift Exchange
- b) Markets
- c) The Commodity Form
- d) Consumption

#### IV. Economy and the State

- a) Socialism: State, production and distribution
- b) Planned Economies
- c) Welfare Systems
- d) Capitalism: State, market and society

### Suggested Readings

1. Baran, P. 1957. *The Political Economy of Growth*. NY: Monthly Review Press.
2. Durkheim, É. 1997. *The Division of Labour in society*. New York: Free Press.
3. Evans, P. B. 1995. *Embedded autonomy states and industrial transformation*. Princeton, NJ: Princeton University Press.
4. Fligstein, N. 2001. *The architecture of markets: An economic sociology of twenty-first-century capitalist societies*. Princeton, NJ: Princeton University Press.
5. Granovetter, M. 1985. "Economic action and social structure: The problem of embeddedness" in *American Journal of Sociology*. Vol. 91, pp. 481–510.
6. Harvey, D. 2009. *A Brief History of Neoliberalism*. Oxford: Oxford University Press.
7. Hoselitz, B.F. 1960. *Sociological Aspects of Economic Growth*. NY: The Free Press.
8. Marx, K. 1963. "Alienated Labour" in T.B. Bottomore (Ed.). *Karl Marx: Early Writings*. New York: McGraw Hill.
9. Marx, K. 1974. *Capital* (Vol. I). Moscow: Progress Publishers.
10. Mauss, M. 2006. *The Gift*. London: Routledge.

11. Mitchell, T. 1998. 'Fixing the Economy' in *Cultural Studies*, 12(1).
12. Nash, M. 1956. *Primitive and Peasant Economic Systems*. California: Chandler.
13. Parsons, T. and N. Smelser. 2010. *Economy and Society*. London: Routledge.
14. Polanyi, K. 2001. *The Great Transformation*. Boston: Beacon Press.
15. Sahlins, M. 1974. *Stone Age Economics*. London: Tavistock.
16. Sahlins, M. 1976. *Culture and Practical Reason*. Chicago: University of Chicago Press, (Chapter 4).
17. Shanin, T. (Ed.). 1971. *Peasant and Peasant Societies*. Harmondsworth: Penguin.
18. Smelser, N. J. and R. Swedberg. 2005. *The handbook of economic sociology*. Princeton, NJ: Princeton University Press.
19. Taussig, M. 2010. *The Devil and Commodity Fetishism in South America*. Chapel Hill: University of North Carolina Press.
20. Trigilia, C. 2002. *Economic sociology: State, market, and society in modern capitalism*. Oxford, UK: Basil Blackwell.
21. Weber, M. 1978. *Economy and society: An outline of interpretive sociology*. Berkeley: University of California Press.

## MSOC 3.3: Diaspora Studies

### Objectives:

This paper intends to create an awareness among the students about the significance of diaspora as an inevitable and essential factor in the developmental process. It is designed to acquaint the students with the Concept, Approaches and Issues of Diaspora so as to enable them to understand the dynamics of the social process of Diaspora and its relevance in the contemporary world.

### I. Understanding the concept

- a) Acculturation, cross-cultural experience, decolonization
- b) Indentured Diaspora, In-Diaspora, Hybridity, other/otherings
- c) Hyphenated identities, cultural identity, in-betweenness, host culture
- d) Migration and theories of diaspora: Transnationalism and globalisation

### II. Dimensions

- a) Historical dimensions
- b) Sociological dimensions
- c) Literary and cultural dimensions
- d) Home and abroad in the new millennium

### III. Current perspectives

- a) Role of translation, media and technology in connecting diasporas
- b) Role of politics and political consciousness in Diasporas
- c) Economic profile and mobility patterns of new generation of diasporas
- d) Brain Grain/ Brain circulation: Reverse/ return migration

### IV. Case Studies (Subject to modifications)

- a) Indian Diasporas from Punjab, West Bengal and Gujarat
- b) African Diaspora or Transient diasporas: The middle east
- c) The Caribbean: Trinidad and Tobago
- d) Political: Fiji

### Suggested Readings:

1. Appadurai, A. 1996. *Modernity at Large*. N.Y.: University of Minnesota Press.
2. Baumann, M. 2000. *Diaspora: Genealogies of Semantics and Transcultural Comparisons*. *Numen*, Vol 47: Issue 3, Jan 1<sup>st</sup>, P. 313-337
3. Bhat, C. K. & Laxminarayan. 2010. 'Indian Diaspora, Globalization and Transnational Networks: The South African Context', in Singh, Anand, Ravindra K. Jain and Shobhita Jain (eds.), *Adversity to Advantage: The Saga of People of Indian Origin in South Africa*, Pp. 13-23. Delhi: KRE Publishers.
4. Irudaya, Rajan. 2011. *Dynamics of Indian migration*. N.Y: Routledge
5. Jayaram, N. (Ed.). 2012. *Diversities in the Indian Diaspora*. Delhi: Oxford University Press.
6. Jayram, N. 2004. *The Indian Diaspora*. ISS: Sage
7. Kadekar and Bhat. 2009. *The Indian Diaspora*. Jaipur: Rawat Publication.
8. Oonk, Gijbert (ed.). 2008. *Global Indian Diasporas: Exploring the Trajectories of Migration and Theory*, pp. 89-118 Amsterdam: Amsterdam University Press.
9. Rayaprol, A. 2001, "Can You Talk Indian?": Shifting Notions of Community and Identity in the Indian Diaspora," in Surinder Singh Jodhka (ed.), *Community and Identities in South Asia*, pp.163-190. New Delhi: Sage Publications.
10. Sahoo and Kadekar. 2012. *Global Indian Diaspora. History, Culture & Identity*. Jaipur: Rawat Publication.
11. Vinay Lal. 2008. "The Diaspora at Home: Returnees Retirees and Resident Non-Indians" in *The Other Indians: A Political and Cultural History of South Asians in America*. New Delhi: Harper Collins.

## SEMESTER IV

### MSOC 4.1: Sociology of Religion

#### Objectives:

This course is designed to enable students to identify, understand the sociological aspects of religion and analyse the processes of religious movements. It will enable the students to understand how religion has evolved as an institution and the critical role played by religion in bringing change and development in the society.

#### I. Meaning and Definition

- a) Definitions and its relationship with philosophy, morality, Dharma Science and Law.
- b) Basic concepts: sacred, profane, belief system, spirituality, magic
- c) Elements of religious experience
- d) Religious dimensions of Tribals in North East India

#### II. Approaches to the study of religion

- a) Classical approach: Durkheim Marx, Weber, Lewis Strauss
- b) Contemporary approach: Phenomenological, Neo Marxist, Freudian, New Functional, Anthropological
- c) The insiders view: theologians and religious believers
- d) Marcel Mauss and Ethnology

#### III. Religion in India: A socio-historical perspective and contemporary trends

- a) Buddhism
- b) Christianity
- c) Hinduism
- d) Islam

#### IV. Religions and social change

- a) Cults
- b) New Religious movements: Religious Organizations
- c) Religion and Globalization
- d) Religion and Modernity

#### Suggested Readings:

1. A. Nandy, Trivedy, Mayaram and Yagnik. 1987. *Creating a Nationality: The Ramjan ma bhoomi Movement and the Fear of the Self*. Delhi: OUP.
2. Bose, N. K. 1949. *The Structure of Hindu Society*. New Delhi: Orient Longman Ltd
3. Dalmia, Vasudha and H.vonSteitencron. 1995. *Representing Hinduism: The Construction of Religious Tradition and National Identity*. New Delhi: Sage Publications.
4. Jurgensmeyer, Mark. 1993. *Religion Nationalism confronts a Secular State*. Delhi: OUP.
5. Madan, T. N. 1991. *Religion in India*. New Delhi: OUP.
6. Veer, Peter van der. 1989. *Gods on Earth: The management of Religious Experience and Identity in North Indian Pilgrimage Centre*. Delhi: OUP.

## MSOC 4.2: Environmental Sociology

### Objectives:

This course explores contemporary environmental issues from a sociological point of view focusing on the interconnectedness of human societies and the natural environment. It introduces the subject and its emergence, looks into the issues emerging out of the man-nature relationship and how these issues are approached from different perspectives. The course also seeks to familiarise the students with the various policies, prescriptions and mobilisations of the contemporary environmental issues in the global society.

### I. Introducing Environmental Sociology

- a) Environmental problems and society
- b) Sociological Approaches to Environment: Classical Sociology and Environment
- c) Contemporary theoretical approaches
- d) The Rise, decline and resurgence of Environmental sociology

### II. Socio-Environmental Concern

- a) Environment and Population
- b) Water, sanitation and pollution
- c) Development and displacement
- d) Environment and technology

### III. Social Consequences of Environmental Disruption

- a) Body, Health and Environment
- b) Environmental Inequality and Environmental Justice
- c) The state and environmental Policy
- d) Sustainable development: challenges of sustainable development

### IV. Environmental Movements (subject to modification)

- a) Chipko movement
- b) Silent Valley Project
- c) Jungle Bachao Andolan
- d) Navdanya Movement

### Suggested Readings

1. Bell, M.M. 2009. *An Invitation to Environmental Sociology*. New Delhi: Pine Forge Press.
2. Buttel, F.H. 1987. "New Directions in Environmental Sociology" in *Annual Review of Sociology*. Vol. 13. pp. 465-488.
3. Dunlap R.E. and W. Michelson. 2008. *Handbook of Environmental Sociology*. Jaipur: Rawat Publications.
4. Dunlap, R.E. et al. 2002. *Sociological Theory and Environment: Classical Foundations and Contemporary Insights*. Maryland- USA: Rowman & Littlefield Publishers.
5. Dunlap, R.E. and W.R. Catton, Jr. 1994. "Struggling with Human Exemptionalism: The Rise, Decline and Revitalization of Environmental Sociology" in *The American Sociologist*. Vol.25, No.1, pp. 5-30.
6. Gadgil, M. and R. Guha. 1996. *Ecology and Equity: The Use and Abuse of Nature in contemporary India*. New Delhi: Oxford University Press.
7. Goldman, M. and R. A. Schurman. 2000. "Closing the 'Great Divide': New Social Theory on Society and Nature" in *Annual Review of Sociology*. Vol. 26, pp. 563-584
8. Gould, K.A. and T.L. Lewis. 2009. *Twenty Lessons in Environmental Sociology*. New York: Oxford University Press.
9. Guha, R. 1994. *Social Ecology*. Bombay: Oxford University Press.
10. Hannigan, J. 2006. [Environmental Sociology](#). Oxford: Routledge.
11. Kalam, M.A. 2001. *Sacred Groves in Kodagu District of Karnataka (South India): A Socio- historical Study*, Pondy Papers in Social Sciences, No.21. Pondicherry: French Institute.
12. Michael R. and G. Woodgate. 2000. *The International Handbook of Environmental Sociology*. Cheltenham, UK: Edward Elgar Publishing.
13. Schnaiberg, A. 1980. *The Environment*. New York: Oxford University P.
14. Shiva, V. 1988. *Staying alive: Women, Ecology, and Development*. New Delhi: Kali for Women.



## MSOC 4.3: Sociology of North East India

### Objectives

This course seeks to introduce the students to the socio-economic and political processes in the northeastern region of India. It intends to appraise the students of the culture, identity and traditions of the various tribes of Northeast. In addition, it focuses on the traditional land relations in northeast India, which is the main axis of traditional social organization in the region and also discusses the changing traditional land relations and its impact on the socio-economic and political process. The course also seeks to acquaint the students with the contemporary socio-economic and political processes, its emerging social consequences and the challenges they pose to the culture and identity of the people.

### I. Northeast India as a Conceptual Category

- a) Geographic and Cultural Specificities, Historicizing 'northeast': From Trans-regional cross-roads to Frontier.
- b) Socio-cultural history of the region during pre-independent period
- c) Creation of new states in post independent period
- d) Functioning of traditional governing institutions and local bodies in the region

### II. Society in Northeast

- a) Tribal and Non-tribal/Caste societies
- b) Their idiosyncratic features and relationship, Nationality Formation in the region
- c) Ethnic diversity, plurality and multi-culturalism of the region
- d) Ethnicity/ ethnic conflict in North East India

### III. Land Relations and Social Forces

- a) Traditional Land System and its implications for Social Stratification,
- b) Emergence of Modern Land System- Commoditization, Privatization
- c) Emergence of New Social Forces.
- d) Geo-politics of development, the role of NEC and the ministry of Doner

### IV. Issues of Identity and Ethnicity

- a) Root of Identity Assertion
- b) Tribal Autonomy and Homeland Politics
- c) Indigenous-Immigrant question in Northeast
- d) State and society in northeast India

### Suggested Readings

1. Baruah, S. 2009. Separatist militants and contentious politics in Assam, India: the limits of counterinsurgency. *Asian Survey*, 49(6).
2. Baruah, S. 2005. *Durable Disorder: Understanding the Politics of Northeast India*. Delhi: Oxford University Press.
3. Baruah, S. 1999. *India against Itself: Assam and the Politics of Nationality*. New Delhi: Oxford University Press.
4. Baruah, Sanjib. 2012. Whose river is it anyway? The political economy of hydropower in the eastern Himalayas. *Economic and Political Weekly*, 47(29).
5. Biswas, P. and C. Suklabaidya. 2007. *Ethnic Life Worlds in Northeast India*. New Delhi: Sage Publications.

6. Brunner, H. P. (Ed.). 2010. *Northeast India: Local Economic Development and Global Markets*. New Delhi: Sage Publication.
7. Chaube, S. 1999. *Hill Politics in North-East India*. Delhi: Orient Longman.
8. Das, A.K. 2009. "Women empowerment sans power: cases from Northeast India" in Kedilezo Kikhi and Narola Dangti Kikhi (Eds.) *Changing Gender Equation with Special Reference to Nagaland*. New Delhi: Akansha Publishing House, pp. 44-56.
9. Das, A.K. and P. K. Nath. 2013. "Agrarian Distress and Land Alienation in India's Northeast" in *Journal on Frontier Studies*, (1), pp. 69-76.
10. Dutta, B.B. 1987. *Land Relations in Northeast India*. Delhi: People's Publishing House.
11. Elwin, V. 1947. *A Philosophy for NEFA*. Itanagar: Directorate of Research, Government of Arunachal Pradesh.
12. Guha, A. 1991. *Medieval and early Colonial Assam: Society, Polity, Economy*. Calcutta: Centre for Studies in Social Sciences.
13. Karna, M. N. 2004. *Agrarian Structure and Land Reforms in Assam*. Delhi: Regency.
14. Kikhi, K. (Ed.). 2013. *The Dynamics of Development in North-East India*. New Delhi: Bookwell.
15. Misra, U. 2000. *The Periphery Strikes Back: Challenges to the Nation-States in Assam and Nagaland*. Shimla: Indian Institute of Advanced Study.
16. Nath, D. 2011. *Religion and Society in North East India*. Guwahati: DVS Publishers.
17. Nayak, P. (Ed.). 2010. *Growth and Human. Development in North-East India*. New Delhi: Oxford University Press.
18. Sharma, C. K. 2000. "Assam: Tribal Land Alienation: Government's Role" in *Economic and Political Weekly*, 36 (52), pp. 4791-4795.
19. Sharma, C. K. 2012. "The Immigration Issue in Assam and Conflicts around it" in *Asian Ethnicity*. 13 (3), pp. 306-7.
20. Subba, T. B. and G.C. Ghosh (Eds.). 2003. *The Anthropology of North-East India*. New Delhi: Orient Longman.
21. Weiner, M. 1978. *Sons of the Soil*. Delhi: OUP.

# ELECTIVE COURSES

## Semester III

### MSOC 3.4A: Feminist Sociology

#### Objectives

The course aims to familiarise the students with the concept of feminist approach and perspectives in analyzing the various social issues. This course will focus on the key issues in feminist theory such as the sex/gender debate and review the various literature on women and bring out its linkages in understanding the theoretical debate on gender deconstruction.

#### I. Feminist Sociologies: Readings and Literatures

- a) What is Feminism? Feminism, Science and Epistemology
- b) Histories and emergence of women studies
- c) Between 1930s and 60s: Margaret Mead, Viola Klien, Mirra Komarovsky
- d) Race and Feminism: Race as a critical category for feminist thought

#### II. Theoretical Debates

- a) Classics and contemporary theoretical perspectives
- b) The sex -gender debate, Gender, Race and Class,
- c) Deconstructing gender differences and inequalities
- d) Feminism and Marxism, Feminism and queer theory,
- e) Post-colonial theory and feminism

#### III. Feminist foundations

- a) Towards Transforming Sociology [working with themes and cases
- b) Feminist sociology in India and South Asia
- c) Transnational Feminism
- d) Women, Nation and Militarism

#### IV. Reading Texts (subject to modifications)

- a) Lakkimsetti, Chaitanya, 2014. "HIV is our Friend, Prostitution, Bio power and State in Post-Colonial India", *Signs: Journal of Women Studies*, 40 (1): 201-226
- b) Hoang, Kimberly. 2014. "Competing Technologies of Embodiment: Pan-Asian Modernity and Third World Dependency in Vietnam's Contemporary Sex Industry," *Gender and Society*, 28 (4): 513-536.
- c) Haney, Lynne. 2010. "Offending Women: Power, Punishment and the Regulation of Desire. Berkeley: University of California Press.
- d) Choo, Hae Yeon. 2013. "The Cost of Rights: Migrant Women, Feminist Advocacy and Gendered Morality in South Korea". *Gender and Society*, 27 (4): 445-468.

#### Suggested Readings:

1. Ahmed, Leila. 2005. "The Veil Debate Again", in *Feminist Theory Reader* (eds) Carole Mc Cann and Seung-Kyung Kim, 4<sup>th</sup> Edition, 7<sup>th</sup> July 2016. New York: Routledge
2. Bell Hooks. 1995. "Feminism and Militarism: A comment", *Women's Studies Quarterly*, 23(3/4): 58-64.

3. Butler, Judith. 1998. "Performative Acts and Gender Constitution: An Essay in Phenomenology and Feminist Theory", *Theatre Journal*, 40 (4), pp. 519-531.
4. Chandra, Mohanty. 2003. "Under Western Eyes" Revisited: Feminist Solidarity through Anti-capitalist Struggles". R2:536.
5. Delamont, Sara. 2003. *Feminist Sociology*. London: Sage.
6. Eldridhe, John et al. 2000. *For Sociology*. London: BSA.
7. Haraway, Donna. 1998. "Situated Knowledges: The science question in Feminism and the privilege of partial perspective", *Feminist Studies* 14 (3): 575-599.
8. Lloyd, Elizabeth. 1993. "Pre-theoretical Assumptions in Evolutionary Explanations of female Sexuality", *Philosophical Studies* 69 (2-3), pp.139-153.
9. Martin, Emily. 1991. "The Egg and the Sperm: How Science and has constructed a Romance Based on Stereotypical Male-Female Roles", *Signs* 16 (3): 485-501.
10. Meyers, Kristen et al, 1998. *Feminist Sociology*. London: Sage.
11. Mrinalini, Sinha. 2004. "Gender and Nation, in *Feminist Theory Reader* (eds) Carole Mc Cann and Seung-Kyung Kim, 4<sup>th</sup> Edition, 7<sup>th</sup> July 2016. New York:
12. Naples, Nancy A. 2003. *Feminism and Method*. New York: Routledge
13. Sedgwick, Eve. 1990. "Epistemology of the closet", *Epistemology of the closet*, 67-90.
14. Smith, Andrea. 2005. "Native American Feminism, Sovereignty and social change", *Feminist Studies* 31 (1): 116.
15. Sydre, R.A. 1987. *Natural Women, Cultured Men*. New York: Meth.
16. Walters, Suzanna Danuta. 1996. "From Here to Queer: Radical Feminism, Post modernism and the Lesbian Menace", *Signs Journal of Women in Culture and Society* Summer (21) 4: 830-869.

## MSOC 3.4B: Crime and Society

### Objectives:

This course is designed to familiarise the students with the concept of crime, its relationship and impact on the society. It situates crime in relation to a wide variety of social forces and institutions including neighborhoods, schools, the media, gender, and criminal justice. Drawing upon criminological theory, students will deepen their understanding of how some of these institutions and forces contribute to crime.

#### I. Meaning

- a) Crime, Criminology and criminology theory
- b) Measurements and Representations of crime
- c) Classical Criminology
- d) Positivist

#### II. Gender and crime

- a) Girls and Violence
- b) Issues and perspectives
- c) Sex trafficking
- d) Bullying

#### III. Ethnicity and Crime

- a) Policing, Punishment, and Crime: Effects on Individuals
- b) Punishment and Crime: Effects on Communities
- c) Customary law and tribal women
- d) Crime and criminal justice system

#### IV. Representation of crime in Popular Media

- a) Media Portrayals of Crime and Criminals
- b) Crime and Fear in Neighborhoods
- c) Schools and Crime
- d) Television violence and aggressions

### Suggested Readings:

1. Beckett, Kathryn and Sasson, Theodore. 2000. "Crime in the News" from *The Politics of Injustice*. 48(3), 639–681.
2. Brunson, Rod K. and Jody Miller. 2009. "Schools, Neighborhoods, and Adolescent Conflict: A Situational Examination of Reciprocal Dynamics." *Justice Quarterly*. 26: 183-210.
3. Cavender, Gray, Kishonna Gray and Kenneth W. Miller. 2010. "Enron's perp walk: Status degradation ceremonies as narrative" *Crime Media Culture*, 6(3): 251-266.
4. Clear, Todd. 2007. *Imprisoning Communities. How Incarceration makes Disadvantaged Neighborhoods Worse*. New York: Oxford University Press.
5. Comstock, George. 2008. "A Sociological perspective on television violence and aggression". *American Behavioral Scientist*, 51, 1184-1211.
6. Crosnoe, Robert. 2006. "The Connection between Academic Failure and Adolescent Drinking in Secondary School." *Sociology of Education*, 79: 44–60.
7. Entmann, Robert and Andrew Rojecki. 2001. "Violence, Stereotypes and African- Americans in the News," from *The Black Image in the White Mind*.
8. Gau, Jacinta M. and Brunson, Rod K. 2009. 'Procedural Justice and Order Maintenance Policing: A Study of Inner-City Young Men's Perceptions of Police Legitimacy', *Justice Quarterly*.

9. Gilliam, Franklin and Iyengar, Shanto. 2000. "Prime Suspects: The Influence of Local Television News on the Viewing Public" *American Journal of Political Science*, 44(3): 560-573.
10. Goffman, Alice. 2009. On the run: Wanted men in a Philadelphia Ghetto. *American Sociological Review*, 74(3), 339-357.
11. Gottfredson, G. D., Gottfredson, D. C., Payne, A. A. and Gottfredson, N. C. 2005. "School Climate Predictors of School Disorder: Results from a National Study Of Delinquency Prevention in Schools." *Journal of Research in Crime and Delinquency*, 42: 412-444.
12. Hirschfield, Paul, and Simon, Daniella. 2010. Legitimizing police violence: Newspaper narratives of deadly force. *Theoretical Criminology*, 14(2), 155-182.
13. Hirschfield, Paul. 2008. The declining significance of delinquent labels in disadvantaged urban communities. *Sociological Forum*, 23(3), 575-601.
14. Jackson, Dylan B. and Carter Hay. 2013. The Conditional Impact of Official Labeling on Subsequent Delinquency: Considering the Attenuating Role of Family Attachment. *Journal of Research in Crime and Delinquency*, 50, 300-322.
15. Janice G. Raymond. 2004. "Prostitution on demand: Legalizing the buyers and sexual consumers." *Violence against Women*, 10, 1156-1186.
16. Jaqck Glaser, Jay Dixit and Donald P. Green. 2002. "Studying hate crime with the internet: What makes racists advocate racial violence." *Journal of Social Science, Issues*, 58, 177-193
17. Miller, Jody. 2008. *Getting Played: African American Girls, Urban Inequality, and Gendered Violence*. New York and London: New York University Press.
18. Quillian, Lincoln, and Devah Pager. 2001. "Black Neighbors, Higher Crime? The Role of Racial Stereotypes in Evaluations of Neighborhood Crime", *American Journal of Sociology*, 107: 717-767.
19. Quillian, Lincoln, and Devah Pager. 2010. Estimating Risk: Stereotype Amplification and the Perceived Risk of Criminal Victimization." *Social Psychology Quarterly* 73(1):79- 104.
20. Rebecca Griffin Smith and Alan M. Gross. 2006. "Bullying: Prevalence and the effect of age and gender". *Child and Family Behavior Therapy*, 28, 13-37.
21. Sampson, Robert ,Jeffrey Morenoff, and Thomas Gannon-Rowley. 2002. "Assessing 'Neighborhood Effects': Social Processes and New Directions in Research" *Annual Review of Sociology*. 28: 443-478.
22. Sharkey, Patrick and Robert J. Sampson 2010. "Destination Effects: Residential Mobility and Trajectories of Adolescent Violence in a Stratified Metropolis" *Criminology*
23. Tyler, Tom. 2000. "Procedural Justice and the Courts." *Court Review*, Volume 44.
24. Weitzer, Ronald and Charis Kubrin. 2004. "Breaking News: How Local TV News and Real World Conditions Affect Fear of Crime" *Justice Quarterly* 21(3), 497-520.

## MSOC 3.4C: Sociology of Globalization

### Objectives:

The course will give an overview of the emergence of globalization which will aid the students to note the characteristics of globalisation and conceptualize what is globalization. It will enable the students to understand its uniqueness and develop ideas about its various dimensions. Further, the students will be able to develop a critical understanding of the emerging processes and the socio-cultural consequences of globalisation, thereby trace out arguments favouring and disfavouring the process.

### I. The Nature and Dynamics of Globalization

- a) The Historical and social context of globalization
- b) Distinctive characteristics of globalization
- c) Dynamics of globalization: World capitalism, modernization and globalization
- d) Advantages and disadvantages of Globalization

### II. Trans-National Globalization

- a) Agencies of Globalization: Multinational corporations (MNCs)
- b) Non-Governmental organizations (NGOs)
- c) International Agencies- International Monetary Funds, World Bank, UN

### III. Social Consequences of Globalization

- a) Inequality within and among Nation state
- b) Differential Perception of globalization among nation and their population
- c) Socio-economic impact of globalization: glocalization
- d) Impact on Individual and group identities

### IV. Globalization and the Indian Experience

- a) Globalization and public policy
- b) Debate on Globalization
- c) Impact of Globalization
- d) Trends of Globalization

### Suggested Readings:

1. Appadurai, A. 1996. *Modernity at Large*. N.Y.: University of Minnesota Press.
2. Bauman, Z. 1998. *Globalization. The Human Consequences*. UK: Polity Press.
3. Brahma, S. 2001. *GAATKarar*. Pune: LokwangmayGriha
4. Bremen, Jan. 1993. *Footloose Labour*. Cambridge University Press
5. Ehrenreich, B. 2002. *Global Woman*. N.Y: H. Holt & Co. pp.85-103.
6. Featherstone, Lash & Robertson (ed.). 1995. *Global Modernities*. New Delhi: Sage Publications.
7. Friedman, T. *The World is Flat*. Penguin. 2006.
8. Lechner and Boli. 2000. *Globalization*. Oxford: Wiley-Blackwell.
9. Pandit, N. 2001. *Jagatikikaran ani Bharat*. Pune: LokwangmayGriha.
10. Parajuli, P. 'Power and Knowledge in Development Discourse: New Social Movements and State in India' in Jayal, N.G. (ed.), *Democracy in India*. New Delhi: OUP.
11. Ritzer, George. 2010. *Globalization, A basic text*. UK: Wiley Blackwell. Chapters: 1-5 and 7-15.
12. Ritzer, George. 2008. *The McDonaldization of Society*. Pine Forge Press.
13. Ritzer, George. 2007. *Blackwell Companion to Globalization*. Malden: Blackwell.
14. Sainath, P. 2000. *Everybody Loves a Good Draught*. U.K.: Penguin.
15. Sharma, S.L. 2010. "Globalization and Social Transformation in India", in Debal Singh Roy (ed.), *Interrogating Social Development, Global Perspective and Local Initiatives*. New Delhi: Mahohar Publications. pp.45-71.
16. Steger, M.B. 2003. *Globalization, A very short introduction*. UK: OUP.
17. Stiglitz, J.E. 2006. *Making Globalization Work*. N.Y.: Norton & Co.
18. Stiglitz, J.E. 2002. *Globalization and its Discontents*. N.Y.: Norton & Co.
19. Walters, M. 2010. *Globalization*. N.Y.: Routledge. Chapters 1-8.

## MSOC 4.4A: Sociology of Education

### Objectives:

The course intends to familiarise the students with the concept of education and society, its formation and relevance. The students will learn fundamental principles and theories from the sociology of education perspective which will help them understand the relationship between education and society and enable them to scientifically analyse the social processes and social patterns involved in the educational system and examine the impact of education on the people and the society.

### I. The Idea of Education

- a) Nature and scope of Sociology of education,
- b) Concept of education: Aims and importance of education
- c) School as a social system (Parsons) and School as a process (Ivan Illich)
- d) Education and socialization, Education and Citizenship, Education and mass media

### II. Theories

- a) Relationship between society and Education
- b) Functionalist – Durkhiem
- c) Marxist- Althusser
- d) Cultural Reproduction- Bourdieu
- e) Symbolic theory – Labov

### III. Schooling practices

- a) The Formation of the Modern Education System
- b) School Culture
- c) Curriculum and Classroom Practices
- d) Counter-School Culture

### IV. Education and Society

- a) Education and Social Stratification
- b) Mobility and Equality of Educational Opportunity
- c) Issues on education: Caste and Class, gender
- d) Patterns of Education and social change

### Suggested Readings:

1. Althusser, L. 1971. “Ideology and Ideological State Apparatuses” in L. Althusser (ed.) *Lenin and Philosophy and Other Essays*, London: New Left Books.
2. Apple, M. W. 1982. *Cultural and Economic Reproduction in Education: Essays on class, ideology and the state*. London: RKP. (Chapters 1, 9).
3. Banks, Olive. 1971. *Sociology of Education*, (2<sup>nd</sup> ed). London: Batsford.
4. Beni, Veronique. 2009. *Schooling India. Hindus, Muslims and the Forging of Citizens*. New Delhi, Orient Blackswan.
5. Bernstein, Basil. 1996. *Pedagogy. Symbolic Control and Identity*. London: Taylor and Francis. (Chapter1).
6. Beteille, A. 1985. *Equality of Opportunity and the Equal Distribution of Benefits*. Pune: Orient Longman (Gokhale Institute of Politics and Economics).



7. Beteille, A. 2009. Institutions and Networks. *Current Science*. 97,2:148-156.
8. Boren. M. E. 2001. *Student Resistance. A History of the Unruly Subject*. New York and London: Routledge.
9. Bourdieu, P and Passeron. J.C. 1977. *Reproduction in Education, Society and Culture*. London: Sage Publications.
10. Coleman. J. S. 1968. "The Concept of Equality of Educational Opportunity", in *Harvard Educational Review*, 38(1):7-22.
11. Dewey, J. (1916). *Democracy and Education. An Introduction to the Philosophy of Education*. New York: Free Press.
12. Durkheim, E. 1956. *Education and Society*. New York: Teachers College Press.
13. Durkheim, E. 1961. *Moral Education*. New York: The Free Press.
14. Friere, P. 1970. *Pedagogy of the Oppressed*. New York: Continuum.
15. Froerer, Peggy. 2007. "Disciplining the Saffron Way: Moral Education and the Hindu Rastra" in *Modern Asian Studies* 41 (05), pp: 1033-1071.
16. Gandhi, M.K. 1977. "Basic Education", in *The Collected Works*. Ahmedabad: Navajivan.
17. Gore, M.S 1975. *Papers on Sociology of Education in India*. New Delhi: NCERT.
18. Halsey, A. H et. al. (eds.). 2002. *Education. Culture, Economy, Society*. Oxford: Oxford University Press (Selected chapters).
19. Jeffrey, Craig, Roger Jeffery and Patricia Jeffrey. 2008. School and *madrasah* education: gender and the strategies of Muslim young men in rural north India. *Compare. A Journal of Comparative and International Education*, 38, 5: 581-593.
20. Kumar. K. 2002. *Prejudice and Pride*. New Delhi: Viking.
21. McLaren, P. 1986. *Schooling as a Ritual Performance: Towards a Political Economy of Educational Symbols and Gestures*. New York: Routledge.
22. Rousseau, Jean-Jacques. 1974. *Emile*. Translated by Barbara Foxley. Everyman's Library. London: J.M. Dent and Sons.
23. Saigol, R. 2000. *Symbolic Violence, Curriculum, Pedagogy and Society*. Lahore: Sahe. (Chapters 5, 6, and7).
24. Thapan, M. 2006 (1991). *Life at School. An Ethnographic Study*. New Delhi: Oxford University Press.
25. Wazir, Rekha (ed.) 2000. *The Gender Gap in Basic Education*. New Delhi: Sage Publications (selected chapters).
26. Willis, P. E. 1977. *Learning to Labour: How Working Class Kids Gets Working Class Jobs*. Surrey, England: Saxon House.

## MSOC 4.4B: Sociology of Health and Illness

### Objectives

This course is intended to provide students with an overview of the sociology of health, illness and medicine in different social and cultural settings. It introduces the students to the social construction of health and the approaches to understanding health and illness by orienting them in major theoretical perspectives in medical sociology that examine the construction of medical knowledge, cross-cultural comparisons of notions of body, health/illness and practices of health care. It seeks to familiarize the students with key issues and debates around methodologies, ethics and politics of health in a global context.

### I. Introduction

- a) Sociology of Health: definition and scope
- b) Concept of Health, Illness and diseases
- c) The emerging relationship between medicines and sociology
- d) Governing Bodies and Bio-Power

### II. Concepts

- a) Patients as a consumer of health care
- b) Social epidemiology
- c) Environment and health
- d) Role of mass media and promotion of health

### III. Culture, Medicine and Medical practice

- a) Biomedicine in cross-cultural contexts
- b) Pharmaceutical Practices, Syncretic Medical Reality
- c) Health services in India: History of public health in India, factors influencing community health and nutrition, National Rural Health Mission
- d) Social organization: Role/ Interpersonal relationship of Hospital, Doctors, Nurses

### IV. Politics of Global Health and Health Policies

- a) State and Medicine
- b) Health, Politics and Ethics: Global Debates
- c) Death and Dying: Debates around Euthanasia
- d) Organ Donations and Transplant, Chosen Bodies: Debate around abortions

### Suggested Readings

1. Arnold, David. 1993. *Colonizing the Body: State, Medicine and Epidemic in 19<sup>th</sup> century India*. Berkley: University of California Press.
2. Bissell, Paul, Kath Ryan and Charles Morecroft. 2006. "Narratives about illness and Medication: A neglected theme/new methodology within pharmacy practice research", in *Pharmacy World & Science* 28(2):54-60.
3. Bode, Maarten. 2008. *Taking Traditional Knowledge to the Market: The Modern Image of the Ayurvedic and Unani Industry, 1980-2000*. Delhi: Orient Blackswan
4. Desjarlais, Robert. 1995. "Struggling Along: The Possibilities for Experience among the Homeless Mentally Ill", in *American Anthropologist* 96:886-901.
5. Ecks, Stefan and S. Basu. 2009. "The Unlicensed Lives of Antidepressants in India: Generic Drugs, Unqualified Practitioners, and Floating Prescriptions", in *Transcultural Psychiatry* 46:86-106.

6. Fassin, Didier. 2007. *When Bodies Remember: Experiences and Politics of AIDS in South Africa*. Berkley: University of California Press.
7. Foucault, M. 1975. *The Birth of the Clinic: Archaeology of Medical Perception*. New York: Vintage Books.
8. Good, B. 1994. *Medicine, Rationality, and Experience: An Anthropological Perspective*. Cambridge: Cambridge University Press.
9. Gordon, Deborah and Margaret Lock (Eds.). 1988 *Biomedicine examined*. Dordrecht: Kulwer Academic Publishers.
10. Inhorn, Marcia. 2000. "Defining Women's health: Lessons from a Dozen Ethnographies", in *Medical Anthropology Quarterly*, Vol. 20(3): 345-378.
11. Khare, R.S. 1996. "Dava, Daktar, and Dua: Anthropology of Practiced Medicine in India", in *Social Science & Medicine* 43(5): 837-848.
12. Kleinman, Arthur. 1981. *Patients and Healers in the Context of Culture: An Exploration of the Borderland between Anthropology and Medicine*. Berkely: University of California Press
13. Kulczycki, Andrzej. 1999. *The Abortion Debate in the World Arena*. New York: Routledge.
14. Lindenbaum, S. and Margaret Lock (Eds.). 1993. *Knowledge, Power, and Practice: The Anthropology of Medicine and Everyday Life*. Berkeley: University of California Press (Selected chapters).
15. Mattingly, Cheryl and Linda C. Garro (Eds.). 2001. *Narrative and the Cultural Construction of Illness and Healing*. Berkley: University of California Press (selected chapters).
16. Mol, Annemarie. 2002. *The Body Multiple: Ontology of Medical Practice*. Durham: Duke University Press.
17. Nichter, Mark 2008. *Global Health: Why cultural perceptions, social representations and biopolitics matter*. Tucson: University of Arizona Press.
18. Radley, Allan and M. Bilig. 1996. "Accounts of Health and Illness: Dilemmas and Representations", in *Sociology of Health and Illness*, 18 (2)220-240.
19. Rapp, Ryna. 2000. *Testing Women, Testing the Foetus: The Social Impact of Amniocentesis in America*. New York: Routledge.
20. Scheper-Hughes, Nancy and Loïc Wacquant (Eds.). 2002. *Commodifying Bodies*. London: Sage.
21. Scheper-Huges, Nancy and Margaret Lock. 1986. "The Mindful Body: A Prolegomenon to Future work in Medical Anthropology", in *Medical Anthropology Quarterly* 1(1)6-41.
22. Seale, Cleave and Julia, Addington-Hall. 1994. "Euthanasia: Why people want to die earlier", in *Social Science and Medicine*, Vol. 39(5):647-654.
23. Sharp, Lesley. 2007. *Bodies, Commodities and Biotechnologies: Death, Mourning and Scientific Desire in the Realm of Human Organ Transfer*. New York: Columbia University Press.
24. Fernand, Melgar. 2006. *Exit: The Right to Die*. First Run-Icarus Film, Brooklyn, New York.

## **MSOC 4.4C: Project Work**

### **Course Description:**

The course is meant to introduce students to sociological field research which is very essential in pursuing the discipline. This course will also help the students to juxtapose theory and the real-world situation in the domain of sociology. This will also enhance student's capability while entering into different professions.

The students have to undertake this research project under the guidance of a faculty member. The allotment of supervisor will be done by the department. Initially they have to submit a research proposal on which they intend to carry out their study. The students have to present their proposal in a seminar in the presence of faculty members. After the submission of proposal, the students have to conduct fieldwork during summer and winter breaks. After finishing the fieldwork, they have to write research report under the guidance of their supervisors. Before the final submission of dissertation, students have to present progress report on their work in a seminar. There will be a viva-voce examination involving an external expert and faculty members of the department.

# CHOICE BASED CREDIT TRANSFER (CBCT)

## MSOT 1.5: Peace and Conflict Studies

### Objectives

This course is designed to help the students to critically address the processes of conflict management, conflict resolution, conflict transformation and peace building processes. This course also focuses on the different social agencies for peace and addresses the various challenges in building peace in today's contemporary world. The course intends to help the students to understand and define peace by exploring the processes of conflict and peace in the society.

#### I. Understanding Peace and Conflict Studies

- a) Inter-disciplinary Approaches to Peace and Conflict Studies
- b) Methods in Peace and Conflict Studies
- c) War and Peace: Liberalist, Realist and Marxist Perspectives
- d) Evolution of Peace and Conflict Studies

#### II. Conflict Analysis: Structures and Processes

- a) Conflict: Sources, Typology and Nature
- b) Actors, Structures and Level in Conflict
- c) Conflict Management, Resolution and Transformation
- d) Peace-making, Peacekeeping, and Peace building

#### III. Conflict and Peace Building

- a) Religion, Conflict and Peace Building: Techniques of conflict transformation and Peace building methods in various religions with special reference to Hinduism, Buddhism, Jainism, Christianity and Islam
- b) Gender, Conflict and Peace Building: Women's Role in Conflict Prevention
- c) Media, Conflict and Peace Building: Media as Conflict Generator and Conflict Mitigator
- d) Case studies of Conflict and Peace Building in Northeast India.

#### IV. Challenges to Peace in the Contemporary World

- a) Traditional and non-traditional threats
- b) From International Conflicts to Intra-state conflicts,
- c) Ethnic Conflicts and Terrorism
- d) Natural Resources and Conflict

### Suggested Readings:

1. Bercovitch, J., & Jackson, R. 2009. *Conflict resolution in the twenty-first century: Principles, methods, and approaches*. Ann Arbor, MI: University of Michigan Press.
2. Blalock, H.M., A.B. eds. 1968. *Methodology in Social Research*. New York: Publisher.
3. Bryman, Alan. 2008. *Social Research Methods*. New York: Oxford University Press.
4. Burton, John and et.al. 1990. *Conflict: Practices in Management, Settlement and Resolution*. UK: Palgrave Macmillan.

5. Crocker, C.A. and F.O. Hampson, et al. 2007. *Leashing the Dogs of War: Conflict Management in a Divided World*. Washington D. C: USIP Press.
6. Galtung, Johan. 1996. *Peace by Peaceful Means: Peace and Conflict, Development and Civilization*. London: Sage Publications.
7. Jeong, Ho-Won .2017. *Peace and Conflict Studies: An Introduction*. New York: Routledge.
8. Lederach, J.P. 2005. *The Moral Imagination: The Art and Soul of Building Peace*. Boston: Oxford University Press.
9. Lederach, John Paul. 1995. *Preparing for Peace: Conflict Transformation Across Cultures*. Syracuse: Syracuse University Press.
10. Pruitt, D.G. and S.H. Kim. 2004. *Social Conflict: Escalation, Stalemate, and Settlement*. Boston: McGrawHills.
11. Sandole, Dennis J.D and Hugo van der Merwe. 1993. *Conflict Resolution Theory and Practices: Integration and Application*. Manchester: Manchester University Press.
12. Somekh, Bridget and Cathy Lewin. 2005. *Research Methods in the Social Sciences*. **Place:** Sage Publication.
13. Wallensteen, P. 2007. *Understanding Conflict Resolution*. London: Sage Publication.
14. Webel, Charles and Johan Galtung. 2007. *Handbook of Peace and Conflict Studies*. U. K: Routledge.

## MSOT 2.5: Sociology of Disasters

### Objectives

The objective of this course is to introduce students to the concept of disaster, the causes and the consequences of disaster. It examines how disasters are fundamentally social events that reflect the ways that we live and structure our communities and societies, thereby orienting the students in preventing, apprehending and managing disaster.

#### I. Introduction to Disaster and Disaster Planning

- a) Concepts, definitions
- b) Nature of disasters.
- c) Importance and relevance
- d) Challenges

#### II. Causes and Types of Disasters

- a) Famines, floods, earthquakes, epidemics, wars
- b) Industrial disasters, nuclear disasters
- c) A case study on natural disaster
- d) A case study on man-made disaster

#### III. The effects and aftermath of disasters

- a) Victims and survivors
- b) The role of the state in preventing, apprehending and managing disasters
- c) Role of the various stakeholders
- d) Role of media

#### IV. Disasters and Civil Society

- a) The role of voluntary organizations,
- b) Political organizations,
- c) Citizens associations and
- d) International bodies.

### Suggested Readings:

1. Das, Veena and Ashish Nandy. 1985. "Violence, Victimhood and the Language of Silence", *Contributions to Indian Sociology* (n. s) 19.1 (1985).
2. Dhirendra Sharma. 1983. *India's Nuclear Estate*. New Delhi: Lancers Publishers.
3. Nandy, Ashish. 1985. "The Bomb", in *The Illustrated Weekly of India*, 4 August 1985.
4. Praful, Bidwai . 1986. "Atomic Power on the Run", in *The Times of India*, 13-15 October 1986.
5. Sahasrabudhey, Sunil. 1985. "Bhopal: Science Must Share the Blame", *PPST Bulletin*, 1985, 5, pp.6-14,25-9.
6. Sen, Amartya. 1981. *Poverty and Famines*. New Delhi: OUP.
7. Sharma, Dhirendra (ed.). 1986. *The Indian Atom: Power and Proliferation*. New Delhi: Philosophy and Social Action.
8. Sharma, Dhirendra. 1983. *India's Nuclear Estate*. New Delhi: Lancers.
9. Visvanathan, Shiv. 1986. "Bhopal: The Imagination of a Disaster", in *Alternatives*, 1986, II, pp.147- 65.

## MSOT 3.5: Social Stratification and Mobility

### Objectives:

The course is designed to develop a critical understanding of the approaches, theories and dimensions of social stratification in understanding the nature, types of social stratification. It discusses intersecting inequalities and mechanisms of reproducing inequalities and social mobility in the context of class, gender, ethnicity and race.

#### I. Understanding Social Stratification

- a) Social Stratification and Social Inequality: meaning and concepts
- b) The Problem of Ethical Neutrality
- c) Difference, Equality, and inequality
- d) Theories of social stratification: Davis and Moore, Parsons, Marx and Weber.

#### II. Social Stratification

- a) Classes as Non-antagonistic Strata, Classes as Antagonistic Groups
- b) Emergence of middle-class system
- c) Social stratification in urban and industrial settings
- d) Changing dimensions of social stratification

#### III. Social Mobility

- a) Types of social mobility
- b) Sources and causes of mobility
- c) Caste and class mobility
- d) Emerging trends of caste mobility in India

#### IV. Race, Ethnic and Gender Stratification

- a) Patriarchy and the Subordination of Women
- b) The Family as a Site of inequality
- c) Gender stratification in Work, Entitlements, education
- d) The Community, the State and Patriarchy

### Suggested Readings:

1. Balibar, E and Wallerstein. I. 1991. *Race, Nation, Class: Ambiguous Identities*. London: Verso. (Chapter 4).
2. Beteille, A. 1983. *The Idea of Natural Inequality and other Essays*. Delhi: Oxford University Press. (pp.7-32).
3. Beteille, A. 1983. 'Introduction', in Andre Beteille (ed.): *Equality and Inequality: Theory and Practice* (1-27). Delhi: Oxford University Press.
4. Beteille, A. 1977. *Inequality among Men*. Oxford: Basil Blackwell.
5. Chakravarti, U. 1995. "Gender, Caste, and Labour", in *Economic and Political Weekly*, 30 (36): 2248-56.
6. Chowdhry, P. 1997. 'Enforcing Cultural Codes: Gender and Violence in Northern India', *Economic and Political Weekly*, 32 (19):10119-28.
7. Dahrendorf, R. 1968. *Essays in the Theory of Society*. London: Routledge & Kegan Paul. (Chapter1).
8. Davis, A. 1982. *Women, Race and Class*. London: The Women's Press. (Chapter11).
9. Delphy, C and Leonard, D. 1992. *Familiar Exploitation: A New Analysis of Marriage in Contemporary Western Societies*. Cambridge: Polity Press. (Chapters 1, 4 and 9).



10. Erikson, R and J.H. Goldthorpe. 1992. *The Constant Flux: A Study of Class Mobility in Industrial Societies*. Oxford: Clarendon Press. (Chapter: 1 and7).
11. Genovese, E.D. 1976. *Roll, Jordan, Roll: The World the Slaves Made*. New York: Vintage Books. (Book I, Part-I; Book IV, pp. 587-97,597-98).
12. Gordon, L. 1991. 'On 'Difference', *Gender*, 10:91-111.
13. Gupta, D. 1991. 'Hierarchy and Difference', in Dipankar Gupta (ed.): *Social Stratification* (1-21). Delhi: Oxford University Press.
14. Kapadia, K. 1996. *Siva and Her Sisters: Gender, Caste, and Class in Rural South India*. Delhi: Oxford University Press. (Part 3).
15. Lerner, G. 1986. *The Creation of Patriarchy*. New York: Oxford University Press. (Introduction, Chapters 1, 2 and Appendix).
16. Levi-Strauss, C. 1958. *Race and History*. Paris: UNESCO.
17. Marx, K. 1975. *The Poverty of Philosophy*, Moscow: Progress Publishers. (Chapter 2, Section5).
18. Mazumdar, V and Sharma, K. 1990. 'Sexual Division of Labour and the Subordination of Women: A Reappraisal from India', in Irene Tinker (ed.): *Persistent Inequalities* (185-97) New York: Oxford University Press.
19. Meillassoux, C. 1973. "Are there Castes in India?", in *Economy and Society*, 2(1):89-111.
20. Mencher, J. 1991. 'The Caste System Upside Down', in Dipankar Gupta (ed.): *Social Stratification* (93-109). Delhi: Oxford University Press.
21. Mendelsohn, O., and Vicziany M. 1998. *The Untouchables: Subordination, Poverty and the State in Modern India*. Cambridge: Cambridge University Press. (Chapters 1, 2 and 9).
22. Miliband, R. 1983. *Class Power and State Power*. London: Verso. (Chapter 1). Oommen, T.K. 1997. *Citizenship, Nationality and Ethnicity: Reconciling Competing Identities*. Cambridge: Polity Press. (Parts I and III).
23. Palriwala, R. 2000. "Family: Power Relations and Power Structures", in C. Kramarae and D. Spender (eds.): *International Encyclopaedia of Women: Global Women's Issues and Knowledge* (Vol. 2: 669-74). London: Routledge.
24. Sen, A. 1990. "Gender and Cooperative Conflicts", in Irene Tinker (ed.): *Persistent Inequalities* (123-49). New York: Oxford University Press.
25. Tambiah, S. J. 1996. 'The Nation-State in Crisis and the Rise of Ethnonationalism', in Edwin N. Wilmsen and Patrick McAllister (ed.): *The Politics of Difference: Ethnic Premises in a World of Power* (124-43). Chicago: The University of Chicago Press
26. Vasanth and Kannabiran. K. 2003. 'Caste and Gender: Understanding Dynamics of Power and Violence', in Anupama Rao (ed.): *Gender & Caste* (249-60). Delhi: Kali for Women.
27. Weber, M. 1978. *Economy and Society*. Berkeley: University of California Press (Vol. I, Part-I, Chapter 4; Vol. II, Part-II, Chapter 9, Section 6).
28. Wesolowski, W. 1979. *Classes, Strata and Power*. London: Routledge & Kegan Paul. (Chapters 1 and 3).
29. Wright, Olin E. 1985. *Classes*. London: Verso. (Chapter).

## MSOT 4.5: Sociology of Population Studies

### Objective:

The course gives an overview of the demographic studies and examines the aspects of population composition, the theoretical perspectives and the policy implications. It focuses on the relationship between demographic phenomena and socio-cultural and economic phenomena and highlights the underlying dynamics between them.

### I. The Field of Social Demography

- a) Nature and Scope
- b) Importance of population studies
- c) Demography and Population Studies, Social Demography-Basic Demographic Concepts
- d) Sources of population data: Census, Civil Registration, Population Register, Sample Surveys and National Family and Health Surveys (NFHS).

### II. Theories of Population

- a) Mercantilism and Physiocracy- Malthus
- b) The Classical and Neo-Classical Schools- Marx
- c) Optimum Population Theory
- d) Theory of Demographic Transition.

### III. Age-Sex Composition and migration

- a) Age and Sex Composition- Factors Affecting Age-Sex
- b) Composition- Consequences of Age-Sex Composition, Literacy levels, rural - urban composition
- c) Measures of Migration- Internal Migration- International
- d) Migration- Determinants of Migration- Differential Migration

### IV. Fertility and Mortality

- a) Measures of Fertility- Determinants of Fertility- Differential Fertility
- b) Measures of Mortality- History of Mortality Trends and Causes of Death- Differential Mortality
- c) Family planning programme in India
- d) Current population related problems

### Suggested Readings

1. Ahmad, Aijazuddin et.al. (eds.). 1997. *Demographic Transition: The Third World Scenario*. New Delhi: Rawat.
2. Bhende, Asha and Tara Kanitkar. 2003. *Principles of Population Studies*. Bombay: Himalaya Publishing House.
3. Hauser, Philip M. and Otis Dudley Duncan (Eds.). 1959. *The Study of Population: An Inventory and Appraisal*. Chicago: Chicago University Press, 1959.
4. Heer, David and Jill S.Grigsby. 1994. *Society and Population*. New Delhi: Prentice-Hall of India.
5. Kammeyer, Kenneth C.W. and Helen Ginn. 1988. *An Introduction to Population*. New Delhi: Archives Books.
6. Overbeek J. 1979. *History of Population Theories*. Rotterdam: Rotterdam University Press.
7. Peterson, William. 1975. *Population*. New York: Macmillan.
8. Sen, Ragini. 2003. *We the Billion: A Social Psychological Perspective on India's Population*. New Delhi: Sage Publications.
9. United Nations. 1973. *The Determinants and Consequences of Population Trends*. New York: Department of Economic and Social Affairs.

# **M.A. Economics Syllabus**

**Under  
Choice Based Credit System**

Department of Economics  
ST. JOSEPH'S COLLEGE (AUTONOMOUS)  
JAKHAMA

## DETAILS OF COURSES UNDER MASTER OF ARTS IN ECONOMICS

1. CORE COURSE: 14 Courses (Compulsory) 4 credits each 14x4= 56 credits  
2. ELECTIVE COURSE: 6 Courses (Choose any one in each semester) 4 credits each  
2x4= 8 credits  
3. CHOICE BASED CREDIT TRANSFER: 4 Courses, 3credits each 4x3= 12 credits

### CORE COURSE

	COURSE CODE
1. Micro Economics-1	MECC 1.1
2. Macro Economics-1	MECC 1.2
3. Mathematical Methods for Economics	MECC 1.3
4. Monetary Economics	MECC 1.4
5. Micro Economics-2	MECC 2.1
6. Macro Economics-2	MECC 2.2
7. Techniques of Statistical Analysis	MECC 2.3
8. Economics of Growth and Development	MECC 2.4
9. Economics of Agriculture	MECC 3.1
10. International Economics	MECC 3.2
11. Research Methodology	MECC 3.3
12. Dissertation	MECC 4.1
13. Indian Economy	MECC 4.2
14. Welfare Economics	MECC 4.3

### ELECTIVE COURSES

1. Introductory Econometrics	MECC 3.4A
2. Human Resource Development and Management	MECC 3.4B
3. Environmental Economics	MECC 3.4C
4. Public Economics	MECC 4.4A
5. Economics of Gender	MECC 4.4B
6. Financial Institutions and Markets	MECC 4.4C

### CHOICE BASED CREDIT TRANSFER (CBCT)

1. Micro Economics -1	MECT 1.5
2. Micro Economics-2	MECT 2.5
3. Monetary Economics	MECT 3.5
4. Indian Economy	MECT 4.5

## Master of Arts in Economics

1. Credits to be completed for award of the degree: 76
2. Minimum duration: 4 Semesters (two years)
3. Maximum duration: 6 Semesters (three years)

### COURSE STRUCTURE

#### Semester I

Total Credits 16+3=19

Course Code	Course Name	L+T+P	CH	CR	Course Type	Skill Based Course (Yes/No)
MECC 1.1	Micro Economics-1	3-1-0	4	4	Core	No
MECC 1.2	Macro Economics-1	3-1-0	4	4	Core	No
MECC 1.3	Mathematical Methods for Economics	3-1-0	4	4	Core	No
MECC 1.4	Monetary Economics	3-1-0	4	4	Core	No
CBCT	To opt from another department			3		

#### Semester II

Total Credits 16+3=19

Course Code	Course Name	L+T+P	CH	CR	Course Type	Skill Based Course (Yes/No)
MECC 2.1	Micro Economics-2	3-1-0	4	4	Core	No
MECC 2.2	Macro Economics-2	3-1-0	4	4	Core	No
MECC 2.3	Techniques of Statistical Analysis	3-1-0	4	4	Core	No
MECC 2.4	Economics of Growth and Development	3-1-0	4	4	Core	No
CBCT	To opt from another department			3		

#### Semester III

Total Credits 16+3=19

Course Code	Course Name	L+T+P	CH	CR	Course Type	Skill Based Course (Yes/No)
MECC 3.1	Economics of Agriculture	3-1-0	4	4	Core	NO
MECC 3.2	International Economics	3-1-0	4	4	Core	No
MECC 3.3	Research Methodology	3-1-0	4	4	Core	No
MECC 3.4A	Introductory Econometrics	3-1-0	4	4	Elective	No
MECC 3.4B	Human Resource Development and Management					
MECC 3.4C	Environmental Economics					
CBCT	To opt from another department			3		

**Semester IV****Total Credits 16+3=19**

<b>Course Code</b>	<b>Course Name</b>	<b>L+T+P</b>	<b>CH</b>	<b>CR</b>	<b>Course Type</b>	<b>Skill Based Course (Yes/No)</b>
<b>MECC 4.1</b>	Dissertation	3-1-0	4	4	Core	Yes
<b>MECC 4.2</b>	Indian Economy	3-1-0	4	4	Core	No
<b>MECC 4.3</b>	Welfare Economics	3-1-0	4	4	Core	No
<b>MECC 4.4A</b>	Public Economics	3-1-0	4	4	Elective	No
<b>MECC 4.4B</b>	Economics of Gender					
<b>MECC 4.4C</b>	Financial Institutions and Markets					
<b>CBCT</b>	To opt from another department			3		

**Choice Based Credit Transfer (CBCT)**

(To be opted by students of disciplines other than Economics)

<b>Semester I</b>	<b>MECT 1.5</b>	<b>Micro Economics -1</b>
<b>Semester II</b>	<b>MECT 2.5</b>	<b>Micro Economics -2</b>
<b>Semester III</b>	<b>MECT 3.5</b>	<b>Monetary Economics</b>
<b>Semester IV</b>	<b>MECT 4.5</b>	<b>Indian Economy</b>

# CORE COURSE

## SEMESTER I

### MECC 1.1: MICRO ECONOMICS – I

#### Unit-I: Consumer Behavior

Preference Ordering: Violation of the premises of the indifference curve analysis. Revealed Preference Theory; derivation of demand and indifference curve. Revision of the Demand Theory by Hicks; weak and strong ordering, consistency test, derivation of demand and indifference curve. Lancaster Demand Theory (Characteristics of goods approach)

#### Unit-II: Production and Costs

Production Function: Concept, Elasticity of substitution; Homogeneity and homotheticity; Two-inputs production functions with constant elasticity of substitution; Production functions with multiple inputs; problems in defining elasticity; Economies of scale; Modern theories of costs – Empirical evidences: Derivation of cost functions from production functions; Duality in production; Unbiased and biased technical progress: Hicks and Harrod.

#### Unit-III: Markets

Non-collusive oligopolistic models of Cournot; Bertrand, Stackelberg, Chamberlin and Sweezy (Kinked demand curve); Collusive Models of Oligopoly; Elements of Game Theory: Definitions, Concept of a game; Strategies – simple and mixed; Nash Equilibrium; value of a game; saddle point solution; simple applications.

#### Unit-IV: Risk and Uncertainty

Individual behavior towards risk, expected utility and uncertainty equivalence approaches; Risk and risk aversion – gambling and insurance, the economics of insurance, cost of risk, risk pooling and risk spreading, mean-variance analysis and portfolio selection; efficient market hypothesis; Economics of information.

### BOOKS

1. Baumol, W.J. (1985): *Economic Theory and Operations Analysis*, Prentice Hall.
2. Henderson, J. and R.A. Quandt (1984): *Microeconomic Theory*, McGraw Hill, Tokyo.
3. Koutsoyiannis, A. (1980): *Microeconomic Theory*, MacMillan.
4. Lancaster, K. (1972): *Consumer Demand: A New Approach*, CUP, NY.
5. Layard, P.R.G. and A.A. Walters (1978): *Microeconomic Theory*, McGraw Hill, NY.
6. Mas Colell, A. M. D. Winston and J. R. Green (1995), *Microeconomic Theory*, Oxford Univ. Press, NY.
7. Sen, A. (1999): *Microeconomics: Theory and Applications*, OUP, ND.
8. Shepherd, R.W. (1970): *Theory of Cost and Production Functions*, Princeton Univ. Press, N.J.
9. Salvatore, D. (2003): *Microeconomics: Theory and Applications*, OUP, New Delhi.

### MECC 1. 4: MONETARY ECONOMICS

#### UNIT-I: Evolution and Theories of Money

Evolution, Role and Functions of Money – Gold Standard – Types – Working of the Gold standard – causes for the down fall of the Gold standard – paper currency standard. Quantity Theory of Money, Fisher and Cambridge Keynes Theory of Money and Prices, Milton Friedman – Restatement of Quantity Theory.

## **UNIT-II: Demand and Supply of Money**

Paper currency – system of Note issue – Indian currency system Development and problems. Concepts of supply and demand for money – money supply and price level – Keynes – classical Dichotomy – Real Balance Effect.

## **UNIT-III: Commercial Banks**

Functions and types of commercial banking – balance sheet – credit creation – Investment policy in Commercial Banking. Reserve Bank of India – Functions – Credit Control – Rural and Industrial Credit – Exchange control. Monetary policy – Indian money market organized unorganized functions of Capital Market, credit control quantitative and qualitative methods – limitations.

## **UNIT-IV: Development Banks**

Progress of Indian Banking during post nationalization period – development banks, DBI, IFCI, ICICI – other term financing Institutions in India.

## **BOOKS**

1. Bhole, L M, (1999), Financial Institutions and Markets, Tata McGraw Hill Company Ltd, New Delhi.
2. Bishop. P and D, Dixon, (1992), Foreign Exchange Handbook, McGraw Hill, New York.
3. Brahrnananda. P R, (1982), IMF Loan and India's Economic Future, Himalaya Publishing House, Bombay.
4. Crocker, A, (1982), International Money: Issues and Analysis, The English Language Book Society, London.
5. Edminster, R O, (1986), Financial Institutions, Markets and Management, McGraw Hill, New Delhi.
6. Fisher, G E and R J, Jordon, (1992), Security Analysis' and Portfolio Management, Eastern Economy Edition, New
7. Sundharam K.P.M - Monetary Theory and practices
8. M.L.Seth - Money Banking and International

## **SEMESTER II**

### **MECC 2.1: MICRO ECONOMICS – 2**

#### **Unit-I: Alternative Theories of the Firm**

Baumol's Theory of Sales Revenue Maximization, Marris' Model of Managerial Enterprise; Williamson's Model of Managerial Discretion; Behavioral Theory of the Firm (Model of Cyert and March); Full cost pricing principle; Limit pricing principle (Bains, Sylos-Labini, Modigliani and Bhagwati); Issues regarding existence, purpose and objectives of a firm.

#### **Unit-II: Welfare Economics**

Growth of GNP and welfare; Criteria of welfare maximization: Cardinalists criterion, Bentham's Criterion; Pareto optimality criteria; Compensation principle; Social welfare function – Properties and limitations: Theory of second best. Arrow's impossibility theorem; Sen's proof of this theorem; Equity and efficiency; Rawls' contributions to welfare

#### **Unit-III: The Theory of General Equilibrium**

Walrus Model- Properties; Problem of existence, uniqueness and stability of equilibrium; Excess demand function approach to general equilibrium analysis; Fixed point theorem and the existence of the solution; Modern approach: Input-output and Linear programming model of general equilibrium; Determination of output and price (only Static open models)

#### **Unit-IV: Input Markets**

Demand and supply of inputs: Firm's and Industry's input demand curves; Monopsony and Monopoly in input markets; Unions as monopolists; Bilateral monopoly; Choice of optimal combination of inputs; Adding-Up Problem; Product Exhaustion theorems – Euler's and Clark-Wicksteed-Walras theorems.



## BOOKS

1. Baumol, W.J. (2000): *Economic Theory and Operations Analysis* (18e), Prentice Hall, ND.
2. Dobbs, I. (2000): *Managerial Economics*, OUP, ND.
3. Henderson and Quandt (1980): *Microeconomic Theory: A Mathematical Approach*, McGraw Hill, ND.
4. Intriligator, M.D. (1971): *Mathematical Optimization and Economic Theory*, Prentice Hall, Englewood Cliffs.
5. Koutsoyannis, A. (1979): *Modern Microeconomics* (2e), Macmillan Press, London.
6. Layard, P.R.G. and A.A. Walters (1978): *Microeconomic Theory*, McGraw Hill, NY.
7. Maddala, G.S. and E. Miller (1989): *Micro Economics- Theory and Applications*, McGraw, New Delhi.
8. Salvatore, D. (2004): *Managerial Economics in a Global Economy with Economic Applications* (5e), CENGAGE Learning/South Western.

## MECC 2.2: MACRO ECONOMICS-2

### Unit-1: Supply of Money

Definitions of Supply of Money. Determinants of Money Supply. Measures of Money Supply in India. Money Supply and Liquidity. High powered money and money multiplier; Control of money supply.

### Unit -11: Neo-Classical and Keynesian Synthesis

Classical and Keynesian views on interest; extension of IS-LM model with government (Tax and Its Multiplier and Government Expenditure and its Multiplier); Relative effectiveness of monetary and fiscal policies; Extension of IS-LM models with labour market and flexible prices.

### Unit-III: Theories of Business Cycle

Pure Monetary Theory; Schumpeter's Innovation Theory; Keynes' Theory, Samuelson's Multiplier-Accelerator Interaction Theory; Hicks' Trade Cycle Theory.

### Unit-1V.Theory of Inflation

Classical, Keynesian and Monetarist approaches to inflation; Structuralist Theory of Inflation: Phillips curve analysis - Short run and long run Phillips curve; Friedman and Phelps - the natural rate of unemployment hypothesis; Tobin's modified Phillips curve; Adaptive expectations and rational expectations; Policies to control inflation.

## BOOKS

1. Ackely, G. (1978), *Macro Economic: Theory and Policy*, Macmillan, New York.
2. Branson, W.A. (1989), *Macroeconomic Theory and Policy*, (3rd edition) Harper and Row, New York.
3. Jha. R. (1991), *Contemporary Macroeconomic Theory and Policy*, Wiley Eastern Ltd. New Delhi.
4. Shapiro, E (1996) *Macroeconomic Analysis* Galgodia Publications, New Delhi.
5. Gupta, S.B., *Monetary Planning in India*, Oxford university Press, New Delhi.
6. Gurley, J. and E.S. Shaw (1960), *Money in a theory of Finance*. Brookings Institution, Washington.
7. Reddy, Y.V. (2000), *A review of monetary and financial Sector Reforms in India-A central Banker's Perspective*. UBSPD. New Delhi.
8. Levacic, R. and A. Rebman (1986), *Macro Economics: An Introduction to Keynesian and Neo- Classical Controversies*, Macmillan. London .
9. Rakshit, M. (1998), *Studies in the Macroeconomics of Developing Countries*, Oxford University Press.

## MECC 2.3 TECHNIQUES OF STATISTICAL ANALYSIS

### UNIT I: Central Tendency and Dispersion

Measures of Central Tendency- Mean, Median, Range, Mean deviation, Standard deviation, coefficient of variation, Skewness and Kurtosis.

## **UNIT II: Correlation and Regression**

Meaning; simple, multiple and partial correlations; Coefficient of correlation- Karl Pearson and Rank correlation; Least squares estimation; Regression Analysis: Meaning, Nature of regression lines, Methods of obtaining Regression Lines; Regression Equations, Regression Coefficients, Properties of Regression Coefficients; Partial and Multiple Regression.

## **UNIT III: Elementary Probability Theory and Sampling**

Concept, Calculation of Probability, Theorems of Probability (Addition and Multiplication), Conditional probability and Bayes' Theorem, Mathematical expectation. Principal sets in a sample survey, methods of sampling: non-probability and probability sampling methods, properties of random sampling. Probability Distributions – Binomial, Poisson and Normal Distributions and their properties

## **Unit IV: Theory of Estimation and Hypothesis Testing**

Concept of an estimator and its sampling distributions, Properties of good estimator; Goodness of fit; Confidence interval and level of significance; Errors of types II and I; Testing of Hypothesis - Tests of Significance: Student's t-test, Z test, F test, Chi-square test - Analysis of Variance: One-way classification.

### **Books:**

1. Gupta, S. P. (2005), *Statistical Methods*, Sultan Chand and Sons.
2. Monga, G. S. (2009), *Mathematics and Statistics for Economics*, Vikas Publishing House Pvt. Ltd..
3. Devore, J. L. (2010), *Probability and Statistics for Engineers*, Cengage Learning.
4. Goon, Gupta and Dasgupta (2005), *Fundamentals of Statistics*, Vol. I & II, World Press.
5. Gujarati, D.N., D.C. Porter and S. Gunasekar (2012), *Basic Econometrics*, Tata McGraw Hill.
6. Hooda, R. (2013), *Statistics for Business and Economics*, Vikas Publishing House.
7. Sullivan, M. (2012), *Fundamentals of Statistics*, Pearson. Additional

## **MECC 2.4 ECONOMICS OF GROWTH AND DEVELOPMENT**

### **UNIT I: Theories of Development**

Contributions of Classical economists to the theory of development; Karl Marx and development of capitalistic economy; Schumpeter and capitalistic development; Structural view of development. Partial theories of growth and development- Circular causation; Big Push Theory; Balance and unbalance growth; Technical Dualism; Dependency Theory of Development.

### **Unit II: Economic Growth Models**

Harrod and Domar Growth Model; Neo-classical Growth Models: Solow, Meade, and Mrs. Joan Robinson; Cambridge criticism of Neo classical analysis of growth.

### **Unit 11: Technological Change and Growth Models**

Production Function Approach to Economic Growth and Growth Accounting; Golden rule of accumulation; Endogenous growth models (Romer, Lucas, AK model)

### **Unit 11V: Social Aspects of Development**

Development and Underdevelopment; Measures of Poverty and inequality; Measuring development. Population as limits to growth and as ultimate source, Population, poverty and environment linkages.

## BOOKS

1. Alderman, I. (1961), *Theories of Economic Growth and Development*, Stanford University Press. Stanford.
2. Behrman, S. and T.N. Srinivasan (1995), *Handbook of Development Economics*, Vol. 3, Elsevier, Amsterdam.
3. Brown, M. (1966), *On the Theory and Measurement of Technical Change*, Cambridge University Press. Cambridge, Mass.
4. Dasgupta, P. (1993), *An Enquiry into Well-being and Destitution*, Clarendon Press, London. Gillis. M., D.H. Perkins, M. Romer and D.R. Snodgrass (1992), *Economics of Development*, (3rd Edition), W.W. Norton, New York.
5. Gimmell, N. (1987), *Surveys in Development Economics*, Blackwell, Oxford.
6. Higin, B. (1959), *Economic Development*, Addison Wesley, New York.
7. Kahkonon, S. and M.Olso. (2000), *A new Institutional Approach to Economic Development*,

## SEMESTER III

### MECC 3.1: ECONOMICS OF AGRICULTURE

#### Unit I: Agriculture and Economic Development

Nature of agricultural and rural economics; Traditional agriculture and its modernization; Role of agriculture in economic development; Interdependence between agriculture and industry-some empirical evidence; Models of interaction between agriculture and the rest of the economy: Agricultural development, poverty and environment.

#### Unit II: Diversification of Rural Economic activities

Livestock economics-Livestock resources and their productivity; Problems of marketing: white revolution: Fishery and poultry development; Forestry, horticulture and floriculture; Issues and problems in rural industrialization and development of agro-based industries.

#### Unit III: Economics of Rural Infrastructure

Use of land, water and energy; Rural transport, communication, banking, extension services, role. Modes and problems of rural electrification; Rural social infrastructure-education and health and information dissemination.

#### Unit IV: Agricultural production and productivity

Agricultural Production-Resource use and efficiency; Production function and analyses in Agriculture; Factor combination and resource substitution; cost and supply curve; Size of farm and laws of returns-theoretical and empirical findings; Farm budgeting and cost concepts: Supply response of individual crops and aggregate supply; Resource use efficiency in traditional agriculture: technical change, labour absorption and gender issues in agricultural services.

## BOOKS

1. Appu, P.S. (1996), *Land Reforms in India*, Vikas. New Delhi.
2. Bardhan, P. (1984). *Land, Labour and Rural poverty*, Oxford University Press, New Delhi.
3. Bhaduri, A. (1984), *The Economic Structure of Backward Agriculture*, Macmillan, New Delhi.
4. Bhardwaj, K. (1974), *Production Conditions in Indian Agriculture*, Cambridge University press, Cambridge.
5. Bilgrmi, S.AK (1996), *Agricultural Economic*, Himalaya Publishing House, Delhi. Brahmananda,
6. P.R. and Y.R. Panchumukhi, (Eds.) (1987), *The Development Process of the Indian economy*, Himalaya Publishing house, Bombay.
7. Brahmananda, P.R., B.K. Narayan and A. Kalappa (Ed), (1987), *Dilimas of Rural Development in India*, Himalaya Publishing House, Bombay.

## MECC 3.2: INTERNATIONAL ECONOMICS

### Unit-I: Pure Theory of International Trade

Supply and Demand in International Trade - Gains from trade under constant and increasing opportunity costs; Individual and community indifference curves, equilibrium demand and supply; Mill's Theory of Reciprocal Demand; Marshall's Theory of Offer Curves – elasticity of offer curve; Neo-Classical Model of International Trade – Heckscher - Ohlin Theorem and Theory of Comparative Advantage; Modern Theories of International Trade - Vent-for-Surplus Approach, Availability Approach (I.B. Kravis). Monopolistic Competition and Trade, Increasing Returns to Scale and Trade, other technological explanations

### Unit-II: Trade Effects, Foreign Exchange Market and Globalization

Trade and factor prices - Factor-price equalization; Factor price and complete specialization; Trade and Income Distribution; Trade and factor intensity reversals; Leontief Paradox; Trade and National Income; Import function, equilibrium level of national income, trade multiplier; Aim-means method of achieving equilibrium; Foreign Exchange Market - Demand for, and Supply of, foreign exchange; Foreign Exchange Markets - spot and forward markets, premiums and discounts, hedging, interest arbitrage, speculation; Globalization of World Economy and Indian business.

### Unit-III: The Balance of Payments and the Exchange Rate

The Balance of Payment Account - Balance of Payment equilibrium and disequilibrium in the Balance of payments; Surplus and deficit in the Balance of Payments; Adjustment Mechanism in the Balance of Payments – Direct and Indirect mechanisms; The Gold Standard - definition, mechanism, advantages and disadvantages, operation and collapse; Pegged Exchange rates; Flexible Exchange Rates - case for and against; Fixed Exchange Rates - case for and against; Other effects.

### Unit-IV: Growth, Trade and Instruments of Protection

Trade and Increase in Factor Endowments - The Rybzynski Theorem; Trade and Technical Progress - Neutral, Capital-saving, and Labour-saving Technical Progress; Theory of Tariffs - Stolper-Samuelson Theorem, measurement of optimum tariff; Quotas & Quantitative Restrictions; State Trading Monopolies- Forms and objectives, merits and demerits; Theory of Customs Unions - Trade creation and diversion, production and consumption effects, other dynamic effects of Customs Unions, Intra-Industry Trade.

## BOOKS

1. Bhagwati, J. (Ed.) (1981). *International Trade: Selected Readings*, Cambridge University Press, Massachusetts.
2. Chacholiades, Miltiades (1990). *The Pure Theory of International Trade*, McGraw Hill, Kogakusha, Japan.
3. Cherunilam, Francis (2006), *International Economics*, Tata McGraw-Hill Publishing Co. Ltd., New Delhi.
4. Heller, H. Robert (1988). *International Trade: Theory and Empirical Evidence*, Prentice-Hall of India Pvt. Ltd., New Delhi
5. Kenen, Peter B. (1989). *The International Economy*, Prentice-Hall of India Pvt. Ltd., New Delhi.
6. Kindleberger, C.P. (1977). *International Economics*, D.B. Taraporevala Sons & Co. Pvt. Ltd., Bombay.
7. Meade, James Edward (1952). *A Geometry of International Trade*, George Allen and Unwin Ltd., London.
8. Roy, P.N. (1986). *International Trade: Theory and Practice*, Wiley Eastern Ltd., New Delhi.
9. Sodersten, Bo (1991). *International Economics*, The Macmillan Press Ltd., London.

## **MECC 3.3: RESEARCH METHODOLOGY**

### **Unit I: Research in Economics**

Meaning, Objectives, need and scope of social science research; Research methods versus Methodology; Basic elements of scientific method, fact, conceptual and operational definitions, assumptions, hypotheses; Literature review; Dangers to be avoided.

### **Unit II: Data Collection**

Sources of primary and secondary data; Collection of Primary data: Observation method - participant and non-participant observation; Questionnaires; Schedules; Difference between Questionnaires and Schedules; Interview Method; Other methods of primary data collection, Collection of Secondary data – Pilot study and pre-testing

### **Unit III: Research Design**

Meaning and Significance, Features of a good research design; Different research designs; Sampling Design - Surveys and sampling – Different types of Sample Designs, Steps in Sampling Design, Criteria of Selecting a Sampling Procedure, Sample size, Characteristics of a Good Sample Design. Logical – Mathematical and Statistical methods – Case study methods.

### **Unit IV: Report Writing**

Types of reports, Steps in Writing Report; Methods of Data Analysis and Interpretation of Results; Citation Styles; Bibliography; Appendix.

## **BOOKS**

1. Kothari, C.R. (2004). *Research Methodology*, New International Publishers, New Delhi
2. Bhattacharya S.K., (1990). *Methodology in Research*, Das Gupta, 1995.
3. Kurien C.T. (Ed), (1992). *A Guide to Research in Economics*, Sangam Publishers, Chennai.
4. Ajai S. Gaur, and Sanjaya S. Gaur, (2006). *Statistical Methods or Practice and Research - A Guide to Data Analysis with SPSS*, Response Books, New Delhi.
5. Ahuja, Ram (2009), *Research Methods*, Rawat Publications, Jaipur.
6. Bailey, Kenneth D (1978), *Methods of Social Research*, the Free Press, New York.
7. Bateile, A&T.N.Madan(1975), *Encounter and Experience; Personal Accounts of Fieldwork*; Vikas Publishing House, New Delhi.
8. Huang D.S, *Regression and Econometrics Method*.

## **SEMESTER IV**

### **MECC 4.1 DISSERTATION**

### **MECC 4.2: INDIA ECONOMY**

#### **Unit I: Agriculture**

Nature and importance; Trends in agricultural production and productivity, factors determining productivity; Land reforms; Green revolution; Rural credit.

#### **Unit II: Industry**

Industrial development during the planning period; Industrial policies. Industrial licensing policies- MRTP Act, FERA and FEMA; Industrial sickness- causes and measures to prevent industrial sickness; Role of public sector enterprises.

### **Unit III: External Sector**

Role of foreign trade, trends in exports and imports, composition and direction of India's foreign trade, BOP crises and the new economic reforms- export promotion measures and the new trade policies; Foreign capital- FDI and MNC.

### **Unit IV: Economy of Nagaland**

Natural resources; Population; Infrastructure and structural change in Nagaland Economy. Industrial development, prospects and problems; Agricultural systems, production, productivity and problems; Floriculture in Nagaland.

### **BOOKS**

1. Agarwal, A.N, Indian Economy, Vikas Publishers, New Delhi.
2. Datt, R. and K.P.M. Sundaram, Indian Economy, S. Chand and company Ltd, New Delhi.
3. Misra, S.K. and V.K. Puri, Indian Economy- Its Development and experience, Himalaya publishing house, Mumbai.
4. Dhingra, I.C. (2001), Indian Economy: Environment and Policy, Sultan Chand & Sons, New Delhi.
5. Joshua Thomas Gurudas Das (eds 2002), Dimensions of Development in Nagaland, Regency Publications, New Delhi.
6. Joshua Thomas Gurudas Das (eds), Structural Change in North East India: Resource Industry Linkages, Akansha Publishing House, New Delhi.
7. Borthagur, Dharendra Nath (1992), Agricultural Development of North East Region with special reference to hill agriculture, Bee CeePrakashen, Guwahati.
8. NUTA, Economic Development in Nagaland: Prospects and Constraints.
9. Statistical Handbooks, GON; Economic Surveys (Various Issues), Government of India.
10. Pusa, Khriemenuo (2020), Floriculture in Northeast India: Special Reference to Nagaland, Mittal Publication, New Delhi.
11. Vero, Yelhi (2018), Nagaland Economy: Its Elementary Features.

## **MECC 4.3: WELFARE ECONOMICS**

### **Unit-I: Conceptual and Measurement Issues**

Benthamite approach to aggregate welfare; Optimum resource allocation and welfare maximization, Assumption of uniform income – Utility function of individuals; Question of income distribution; Issue of interpersonal comparisons of utility; Marshallian welfare economics: Consumer's surplus; Measurement of consumer's surplus – Difficulties involved and criticism.

### **Unit-II: Paretian Welfare Economics**

Pigovian welfare economics; Divergence between private and social costs; Problems of non-market interdependence; Externalities of production and consumption; External economies and diseconomies; Problem of public goods; Pareto optimality – Optimum exchange conditions, The production optimum, The consumption optimum; Concept of contract curve; Top level optimum; Infinite number of non-comparable optima vs. unique social optimum; Compensation criteria– Contributions of Barone, Kaldor and Hicks; The Scitovsky double criterion

### **Unit-III: Modern Welfare Economics**

Hicks's four compensation principle, Concepts of consumer's surplus and commodity indifference map; Samuelson's utility possibility curve; Value judgments and welfare in economics; Bergson's social welfare function; Arrow's impossibility theorem.

#### **Unit-IV: Some Recent Developments in Welfare Economics**

Review of the two fundamental theorems of the traditional welfare economics, its axioms and their critique, endogeneity of preference, conflict between individual and social rationality, impracticability of redistribution of resources, the principle of normative individualism, evolutionary approach to social welfare, replacement of traditional paradigm of welfare by human development, institutional restructuring of individual choices.

#### **BOOKS**

1. Arrow, K.J. (1951): Social choice and Individual Values, Yale Univ. Press, New Haven.
2. Baumol, W.J. (1965): Welfare Economics and the Theory of the State, 2e, Longmans, London.
3. Baumol, W.J. (ed.) (2001): Welfare Economics, Edward Elgar, U.K.
4. Broadway, R.W. and N. Bruce (1984): Welfare Economics, Basil Blackwell, Oxford.
5. Feldman, A.M. (1980): Welfare Economics and Social Choice Theory, Martinus Nijhoff, Boston.
6. Little, I.M.D. (1939): A Critique of Welfare Economics, 2e, OUP, Oxford.
7. Myint, H. (1948): Welfare Economics, Macmillan, London.
8. Pigou, A.C. (1962): The Economics of Welfare, 4e, Macmillan, London.

### **ELECTIVE COURSES**

(Choose any one in each semester)

#### **SEMESTER III**

#### **MECC 3.4A: INTRODUCTORY ECONOMETRICS**

##### **UNIT I: Basic Econometrics**

Nature, objectives, scope and limitations of econometrics; Methodology of econometrics; Forecasting and prediction; Stochastic and non-stochastic variables, dummy and proxy variables; Nature and sources of data: time series, cross-section, pooled and panel data; Accuracy of data.

##### **UNIT II: Statistical Concepts**

Normal distribution; Chi-square test and F-distributions: estimation of parameters; properties of estimators; testing of hypotheses: defining statistical hypotheses; distribution of test statistics; testing hypotheses related to population parameters; Type I and Type II errors.

##### **UNIT III: Simple Linear Regression Model: Two Variable Cases**

Meaning, Simple and general linear regression model- assumption; Estimation of model by method of ordinary least squares (OLS); Goodness of fit; Test of hypotheses; Scaling and units of measurement; Gauss-Markov theorem; Forecasting.

##### **UNIT IV: Multiple Regression Model and Problems in Regression Analysis**

Estimation (through OLS approach) and properties of estimators: Concepts and derivation of  $R^2$  and Adjusted  $R^2$ ; Partial regression coefficients; Testing hypothesis-individual and joint; functional forms of regression models; qualitative (dummy) independent variables. Nature, test, consequences and remedial steps of problems of heteroscedasticity, Multicollinearity and autocorrelation.

#### **BOOKS:**

1. Gujarati, D. N. (2007), *Basic Econometrics*, Tata McGraw-Hill, New Delhi.
2. Christopher Dougherty (2007), *Introduction to Econometrics*, Oxford University Press, 3<sup>rd</sup> Edition, Indian Edition.
3. Dougherty, C. (1992), *Introduction to Econometrics*, Oxford University Press, New York.
4. Kennedy, P. (1998), *A Guide to Econometrics* (41h Edition), MIT Press, New York.
5. Kmenta, J. (2008), *Elements of Econometrics*, Indian Reprint, Khosla Publishing House, 2<sup>nd</sup> Edition.

#### **MECC 3.4B: HUMAN RESOURCE DEVELOPMENT AND MANAGEMENT**

### **Unit-I: Introduction**

Introduction to human resource management: Nature, objectives and functions of human resource management; role and structure in the changing business scenario, organizations and changing technologies & their implications for human resource management, an overview of concept and philosophy of HRD, Role of HRD in mergers and acquisitions.

### **Unit-II: Human Resource Planning**

Meaning and Objectives of human resource planning; job design; motivation; empowerment; recruitment, screening, selection, placement, induction; performance appraisal; training and development; outsourcing.

### **Unit-III: Compensation Management**

Components of compensation: monetary benefits (wage and salary, bonus, claims, incentives and fringe benefits, pre dearness allowance) and non-monetary benefits; Theories of compensation: Reinforcement and Expectancy Theories, Equity Theory, Agency Theory; Factors affecting employee compensation; Challenges of compensation; Wage policy in India.

### **Unit-IV: Industrial Relations, Disputes and Trade Unions**

Importance of industrial relations; Approaches to industrial relation: Unity approach, Pluralist approach, Marxist approach, The Human Relation approach; Parties to industrial relation. Industrial Disputes: Causes for Industrial disputes and settlement of disputes. Trade Unions: Nature; Managing trade unions; Historical perspective and problems of trade union movement in India.

### **BOOKS:**

1. Aswathappa. K. (2018). Human Resource Management, Text and Cases, McGraw Hill Education (India) Pvt. Ltd.
2. Ghosh, B. (2011). Human Resource Development and Management, Vikas Publishing House Pvt. Ltd.
3. Jyothi. P. D. N. Venkatesh (2012). Human Resource Management, Oxford University Press, India.
4. Snell, S. and G. Bohlander (2007), Human Resource Management, Baba BarkhaNath Printers, Delhi.

## **MECC 3.4C: ENVIRONMENTAL ECONOMICS**

### **Unit-I: Basic Environmental Issues**

Environment and Ecology; Linkages between Ecology, Environment and Ecosystems; Material Balance Approach; Principles of Uncertainty, Irreversibility, Inter-Temporal Efficiency, Inter-Generational Equity; Environment-Development Trade-Offs; Environmental Costs of Economic Growth, Limits to Growth; Sustainable Concepts and Indicators; Environmental Kuznets Curve. Development

### **Unit-II: Welfare Economics, Social Sectors and Environment**

Pareto optimality and competitive equilibrium: Market failures; Theories of Externality and Public Goods, Solutions to Externality, Coase's Theorem, Property Rights and Transaction Costs; Free Rider's Problem, Optimal Provision of Public Goods: Lindahl's Equilibrium; Common Property Resources – Tragedy of Commons. Land use: Deforestation, Urbanization and their Impact on Environment; Air and Water Pollution; Pigovian Tax and Subsidy on Pollution Control.

### **Unit-III: Environmental Valuation**



Environmental valuation; Environmental Damages/Benefits, Social Cost Benefit Analysis; Definitions: Use Value, Option Value and Non-Use Values- Total Economic Value. Valuation Techniques – Market and Non-Market: - Scientific, Behavioural and Technological - Production Based, Contingent Valuation, Hedonic-Pricing, Travel Cost Method, Risk Assessment, Environmental Impact Assessment; Valuation of Land, Forest and Mineral Resources.

#### **Unit-IV: Economics of Resource Management**

Theories of Optional Use of Exhaustible and Renewable Resources; Integrated Environmental and Economic Accounting and the Measurement Environmentally Corrected GDP; Ecological Footprint Analysis; Comprehensive Wealth and Genuine savings; Global Environmental Governance.

#### **BOOKS:**

1. Baumol, W.J. and W.E. Oates (1988): *The Theory of Environmental Policy* (2e), CUP, Cambridge.
2. Fisher, A.C. (1981): *Resource and Environmental Economics*, CUP, Cambridge.
3. Hanley, Shogren and White (1997): *Environmental Economics in Theory and Practice*, Macmillan.
4. Kolstad, C.D. (1999): *Environmental Economics*, OUP, ND.
5. Pearce, D.W. and R. Turner (1991): *Economics of Natural Resource Use and Environment*, John Hopkins Press, Baltimore.
6. Tietenberg, T. (1994): *Environmental Economics and Policy*, Harper Collins, NY.
7. Arrow, K.J., P. Dasgupta, I.H. Goulder, K.J. Mumford and K. Oleson (2012): “Sustainability and Measurement of Wealth”, *Environment and Development Economics*, 17(3):317-53.
8. Dorfman and Dorfman (1977): *Economics of the Environment* (2e), W.W. Norton, NY.
9. Freeman A. Myrick III (1979). *The Benefits of Environmental Improvement*, Johns Hopkins Univ. Press, Baltimore.
10. Gibbons, R. (1992): *Game Theory for Applied Economists*, Princeton Univ. Press.

## **SEMESTER IV**

### **MECC 4.4A: PUBLIC ECONOMICS**

#### **Unit-I: The Economic Basis of Government Activity and Evaluation of Public Economic Policies**

Efficiency, markets and governments: Markets, Prices and Efficiency conditions; Market failure: A preview of the basis for Government Activity and the functions of the government, Equity versus efficiency – Positive and normative analysis; Externalities and Government policy: Market failures, Externalities and Efficiency, Public Policies to Internalize the Externalities, Global Pollution: Externalities that cross Borders. Public Economic Policies: Allocation, Distribution and Stabilization, Conflicts among the Public Economic Policies.

#### **Unit-II: Theories of Public Goods, Public Expenditures and Taxation**

The Theory of Public Goods: Provision of Private Goods and Public Goods: Markets and Government, The Demand for a pure Public good, Efficient output of a pure public good- Partial and General Equilibrium Analysis, Individual Action, Voluntary Cooperation and Efficiency, Local Public Goods, Voting Models of Public Goods. The Theory of Public Expenditure: Pure Theories of Public Expenditures: Tiebout, Samuelson and Buchanan's Contributions. Theories of Taxation: Tax Neutrality, Direct versus Indirect Taxes and Equity, Buoyancy and Elasticity Estimates of Taxation, Tax Efforts, The impact of taxes on Market prices and Efficiency.

### **Unit-III: Budgeting Fiscal Policies and Income Redistribution**

Program Budgeting: It's Application, Zero-Based Budgeting, and Budgeting Policies; Theory of Fiscal Policy: Fiscal Policy with Special Reference to Under-developed Countries, Federal-Fiscal Relation in India. Income Redistribution: Taxes, Government Expenditures and the distribution of Income, welfare, social security and the social safety Net. Demographic Changes and the future of Social Security, The Impact of Social Security on Savings and work incentives, Government subsidies and Income support: The basis and Trade-off.

### **Unit-IV: Evaluation of Public Investment Projects and Decision Making in the Public sector**

Public Utilities and Project Evaluation: Cost-Benefit Analysis, Measuring Costs, Measuring Benefits, Market Price, Shadow Prices, Choosing a Discount Rate, Distributional and Political Considerations; Problem of Government Failure: Privatization, Devolution, Rules versus discretion, Citizen Decision making; Public and Private Sectors: Lack of Residual Claimant, Citizens and Rational Ignorance, Collective versus Individual Consumption, Lack of Revealed Preference, Measuring and Valuing Output.

### **BOOKS**

1. Bowers, P.F. (1974): *Private Choice and Public Welfare*, Dryden Press, NY.
2. Buitter, W.H. (1990): *Principles of Budget and Fiscal Policy*, MIT Press.
3. David, N. and Nicholas, S. (eds.) (1987): *The Theory of Taxation for Developing Countries*, OUP.
4. Hyman, D.N. (2007): *Public Finance: A Contemporary Application of Theory to Policy*, Thomson Asia Pvt. Ltd., Singapore.
5. Jha, Raghendra (1987): *Modern Theory of Public Finance*, Wiley Eastern, Delhi.
6. Maxdowell, A., Anderson and J. Richard (1973): *Financing State and Local Governments*.
7. Musgrave, Richard A. (1959): *The Theory of Public Finance*, Tata McGraw Hill, N.Y.
7. Mishra, B. (2006): *Economics of Taxation: Theory and Application*, Akansha Publishing House, ND.
9. Prest, A.R. (1975): *Public Finance in Theory and Practice*, Weidenfeld and Nicholson, London.
10. Ursula, H. (1968): *Public Finance*, James Nisbet and Co., London

### **MECC 4.4B: ECONOMICS OF GENDER**

#### **Unit-I: Concept, Importance of Gender Studies: Demography of Gender**

Importance of gender studies – Women in patriarchal and matriarchal societies and structures – Gender bias in the theories of values, distribution and population; Demography of female population – causes of declining sex ratios and fertility rates in LDCs and particularly India – Women and their access to nutrition, health, education and community resources and their impact in female mortality and fertility; Feminist criticism of development indices, theories of gender inequality.

#### **Unit-II: Decision Making, Economic Activity and Women**

Factors affecting decision making by women; property rights, access to and control over economic resources, assets, power of decision making at household, class, community level; economic status of women and its effect in WPR, income level, health and education in developing countries; Concept and analysis of women's work; visible and invisible work, economically and socially productive work; Women in pre-industrial and industrial; societies, female contribution to national income.

### **Unit-III: Labour Market, Technology, Environment and Women**

Factors affecting female entry in labor market, supply and demand for female labor in developed and developing countries; studies of female work participation in agricultural and non-agricultural rural activities, internal sector, cottage and small industries, organized industry and services sector, women & SHGS; Wage differentials in female activities; Determinants of wage differentials, gender, education, skill, productivity, efficiency, opportunity; structure of wage across regions and economic sectors; Impact of technological development and modernization on women's work participation; Female activities and ecological and environmental; concerns – Role of new technologies for helping women.

### **Unit-IV: Social Security, Gender Planning, Development Policies and Governance**

Social security for women: entitlements, economic independence and risk coverage, access to Unit and insurance markets, SHGs & social security; Review of legislations for women's empowerment, social security & property rights – Need for affirmative action on the part of the government; Mainstreaming gender into development policies, gender planning techniques, gender budgeting, gender sensitive governance; Democratic decentralization and women's empowerment.

### **BOOKS**

1. Amsden, A.H. (Ed.) (1980): *The Economics of Women and Work*, Penguin, Harmondsworth.
2. Borerup, E. (1970): *Women's Role in Economic Development*, George Allen and Unwin, London.
3. Engles, F. (1985): *The Origin of the Family, Private Property and the State*, Progress Publications, Moscow.
4. Kabeer, N. (1994): *Reversed Realities: Gender Hierarchies in Development Thought, Kali for Women*, ND.
5. Krishnaraj, M., R.M. Sudarshan and A. Shariff (1999): *Gender, Population and Development*, OUP, ND.
6. Kuhn, A. and A.N. Wolpe (Eds.) (1978): *Feminism and Materialism*, Routledge and Kegan Paul, London.
7. Mies, M. (1998): *Patriarchy and Accumulation on a World Scale: Women in the International Division of Labour*, Zed Books, London
8. Mitra, A. (1979): *Implications of Declining Sex Ratio in India's Population*, Allied, ND.
9. Murthy, K.R. (ed.) (2001): *Building Women's Capacities*.
10. Sen, G. and K. Brown (1987): *Development, Crises and Alternative Visions*, Monthly Review Press, NY.
11. Seth, M. (2000): *Women and Development: The Indian Experience*, Sage, ND

### **Additional Reading**

1. Agnihotri, S.B. (2000): *Sex Ratio in Indian Population: A Fresh Exploration*, Sage, ND
2. Desai, N. and M.K. Raj (Eds.) (1979): *Women and Society in India*, Research Centre for Women Studies, SNDT University, Mumbai.
3. Dwyer, D. and J. Bruce (Eds.) (1988): *A Home Divided: Women and Income in the Third World*, Standard University Press, Stanford
4. Government of India (1974): *Towards Equality Report of the Committee on the Status of Women in India*, Department of Social Welfare, Ministry of Education and Social Welfare, ND.
5. ILO (1978): *Women's Participation in the Economic Activity of Asian Countries*, ILO, Geneva.
6. Kalpagam, -- (1994): *Labour and Gender, Survival in Urban India*, Sage, ND
7. Narasimhan, S. (1999): *An Alternative Strategy of Empowering Women from Rural India*, Sage, Delhi
8. Papola, T.S. and A.N. Sharma (Eds.) (1999): *Gender and Employment in India*, Vikas, ND.
9. Schultz, T.P. (1988): "Education Investments and Returns", in Chenery, H.B. and T.N. Srinivasan (eds.)
10. *The Handbook of Development Economics*, North Holland, NY.
11. Seth, M. (2000): *Women and Development: The Indian Experiences*, Sage, ND.
12. Yong, K. et al (Eds.) (1987): *Serving Two Masters*, Routledge and Kegan Paul, London

## **MECC 4.4C: FINANCIAL INSTITUTIONS AND MARKETS**

### **Unit I: Financial System.**

Structure and Functions of the Financial System, Indicators of the Financial Development: Equilibrium and Financial Markets; Financial system and economic development; Financial intermediation and financial intermediaries. Structure and growth of the Indian Financial Systems since 1950's.

### **UNIT II: International Financial Institution.**

Multilateral financial institutions and their operations. The theory of optimum currency area; Asian Development Bank and India; Euro-dollar and Euro currency markets-Their developmental role and regulation at the international level.

### **UNIT III: Structure of Interest Rates.**

Theories of Interest Rates; Level of Interest Rates: Long and short period rates; Term structure of interest rates, spread between lending and deposit rates; administered interest rates, appropriate interest rate policy.

### **UNIT IV: International Financial Markets.**

Foreign exchange markets: Nature, organization and participants; Exchange rates: Determinants, types and systems; Working of the floating exchange rate since 1973: Devaluation and depreciation; currency convertibility; Foreign capital flows: Uses and determinants.

### **BOOKS:**

1. Bhole, L M, (1999), Financial Institutions and Markets, Tata McGraw Hill Company Ltd, New Delhi.
2. Bishop. P and D, Dixon, (1992), Foreign Exchange Handbook, McGraw Hill, New York.
3. Brahrnananda. P R, (1982), IMF Loan and India's Economic Future, Himalaya Publishing House, Bombay.
4. Crocker, A, (1982), International Money: Issues and Analysis, The English Language Book Society, London.
5. Edminster, R O, (1986), Financial Institutions, Markets and Management, McGraw Hill, New Delhi.
6. Fisher, G E and R J, Jordon, (1992), Security Analysis' and Portfolio Management, Eastern Economy Edition, New Delhi.
7. Goldsmith, R W, (1969), Financial structure and Development, Yale, London.
8. Johnson, H J, (1993), Financial Institutions and Markets, McGraw, New York.
9. Kindleberger, C P, (1996), A History of Financial Crisis, Manias, Panics and Crashes, John Wiley and Sons, New York.

## **Choice Based Credit Transfer (CBCT)**

(To be opted by students of disciplines other than Economics)

### **SEMESTER I**

#### **MECT 1.5: MICRO ECONOMICS- 1**

##### **Unit-I: Consumer Behavior**

Preference Ordering: Violation of the premises of the indifference curve analysis. Revealed Preference Theory; derivation of demand and indifference curve.

Revision of the Demand Theory by Hicks; weak and strong ordering, consistency test, derivation of demand and indifference curve. Lancaster Demand Theory (Characteristics of goods approach)

##### **Unit-II: Production and Costs**

Production function: Concept, Elasticity of substitution; Homogeneity and homotheticity; Two-inputs production functions with constant elasticity of substitution; Production functions with multiple inputs; problems in defining elasticity; Economies of scale; Modern theories of costs – Empirical evidences: Derivation of cost functions from production functions; Duality in production; Unbiased and biased technical progress: Hicks and Harrod.

### **Unit-III: Market**

Non-collusive oligopolistic models of Cournot; Bertrand, Stackelberg, Chamberlin and Sweezy (Kinked demand curve); Collusive Models of Oligopoly; Elements of Game Theory: Definitions, Concept of a game; Strategies – simple and mixed; Nash Equilibrium; Value of a game; Saddle point solution; Simple applications.

### **Unit-IV: Risk and Uncertainty**

Individual behavior towards risk, expected utility and uncertainty equivalence approaches; Risk and risk aversion – gambling and insurance, the economics of insurance, cost of risk, risk pooling and risk spreading, mean-variance analysis and portfolio selection; efficient market hypothesis; Economics of information.

### **BOOKS**

1. Baumol, W.J. (1985): *Economic Theory and Operations Analysis*, PrenticeHall.
2. Henderson, J. and R.A. Quandt (1984): *Microeconomic Theory*, McGraw Hill, Tokyo.
3. Koutsoyiannis, A. (1980): *Microeconomic Theory*, MacMillan.
4. Lancaster, K. (1972): *Consumer Demand: A New Approach*, CUP, NY.
5. Layard, P.R.G. and A.A. Walters (1978): *Microeconomic Theory*, McGraw Hill, NY.
6. Mas Colell, A. M. D. Winston and J. R. Green (1995), *Microeconomic Theory*, Oxford Univ. Press, NY.
7. Sen, A. (1999): *Microeconomics: Theory and Applications*, OUP, ND.
8. Shepherd, R.W. (1970): *Theory of Cost and Production Functions*, Princeton Univ. Press, N.J.
9. Salvatore, D. (2003): *Microeconomics: Theory and Applications*, OUP, New Delhi.

## **SEMESTER II**

### **MECT 2.5: MICRO ECONOMICS-2**

#### **Unit-I: Alternative Theories of the Firm**

Baumol's Theory of Sales Revenue Maximization, Marris' Model of Managerial Enterprise; Williamson's Model of Managerial Discretion; Behavioral Theory of the Firm (Model of Cyert and March); Full cost pricing principle; Limit pricing principle (Bains, Sylos-Labini, Modigliani and Bhagawati); Issues regarding existence, purpose and objectives of a firm.

#### **Unit-II: Welfare Economics**

Growth of GNP and welfare; Criteria of welfare maximization: Cardinalists criterion, Bentham's Criterion; Pareto optimality criteria; Compensation principle; Social welfare function – Properties and limitations: Theory of second best. Arrow's impossibility theorem; Sen's proof of this theorem; Equity and efficiency; Rawls' contributions to welfare

#### **Unit-III: The Theory of General Equilibrium**

Walras Model- Properties; Problem of existence, uniqueness and stability of equilibrium; Excess demand function approach to general equilibrium analysis; Fixed point theorem and the existence of the solution; Modern approach: Input-output and Linear programming model of general equilibrium; Determination of output and price (only Static open models)

#### **Unit-IV: Input Markets**

Demand and supply of inputs: Firm's and Industry's input demand curves; Monopsony and Monopoly in input markets; Unions as monopolists; Bilateral monopoly; Choice of optimal combination of inputs; Adding-Up Problem; Product Exhaustion theorems – Euler's and Clark-Wicksteed-Walras theorems.

## BOOKS

1. Baumol, W.J. (2000): *Economic Theory and Operations Analysis* (18e), Prentice Hall,ND.
2. Dobbs, I. (2000): *Managerial Economics*, OUP,ND.
3. Henderson and Quandt (1980): *Microeconomic Theory: A Mathematical Approach*, McGraw Hill,ND.
4. Intriligator, M.D. (1971): *Mathematical Optimization and Economic Theory*, Prentice Hall, Englewood Cliffs.
5. Koutsoyannis, A. (1979): *Modern Microeconomics* (2e), Macmillan Press,London.
6. Layard, P.R.G. and A.A. Walters (1978): *Microeconomic Theory*, McGraw Hill,NY.
7. Maddala, G.S. and E. Miller (1989): *Micro Economics- Theory and Applications*, McGraw, New Delhi.
8. Salvatore, D. (2004): *Managerial Economics in a Global Economy with Economic Applications* (5e), CENGAGE Learning/SouthWestern.
9. Sen, A. (1999): *Microeconomics: Theory and Applications*, OUP,ND.

## SEMESTER III

### MECT 3.5: MONETARY ECONOMICS

#### UNIT-I: Evolution and Theories of Money

Evolution, Role and Functions of Money – Gold Standard – Types – Working of the Gold standard – causes for the down fall of the Gold standard – paper currency standard. Quantity Theory of Money, Fisher and Cambridge Keynes Theory of Money and Prices, Milton Friedman – Restatement of Quantity Theory.

#### UNIT-II: Demand and Supply of Money

Paper currency – system of Note issue – Indian currency system Development and problems. Concepts of supply and demand for money – money supply and price level – Keynes – classical Dichotomy – Real Balance Effect.

#### UNIT-III: Commercial Banks

Functions and types of commercial banking – balance sheet – credit creation – Investment policy in commercial Banking. Reserve Bank of India – Functions – credit control – Rural and Industrial credit – Exchange control. Monetary policy – Indian money market organized unorganized functions of Capital market, credit control quantitative and qualitative methods – limitations.

#### UNIT-IV: Development Banks

Progress of Indian Banking during post nationalization period – development banks, IDBI, IFCI, ICICI – other term financing Institutions in India.

## BOOKS

1. Bhole, L M, (1999), *Financial Institutions and Markets*, Tata McGraw Hill Company Ltd, New Delhi.
2. Bishop. P and D, Dixon, (1992), *Foreign Exchange Handbook*, McGraw Hill, New York.
3. Brahrnananda. P R, (1982), *IMF Loan and India's Economic Future*, Himalaya Publishing House, Bombay.
3. Crocker, A, (1982), *International Money: Issues and Analysis*, The English Language Book Society, London.
4. Edminster, R O, (1986), *Financial Institutions, Markets and Management*, McGraw Hill, New Delhi.
5. Fisher, G E and R J, Jordon, (1992), *Security Analysis' and Portfolio Management*, Eastern Economy Edition, New
6. Sundharam K.P.M - *Monetary Theory and practices*
7. M.L.Seth - *Money Banking and International*

## SEMESTER IV

### MECT 4.5: INDIAN ECONOMY

#### Unit I: Agriculture

Nature and importance; Trends in agricultural production and productivity, factors determining productivity; Land reforms; Green revolution; Rural credit.

#### Unit II: Industry

Industrial Development during the planning period; Industrial policies. Industrial licensing policies- MRTP Act, FERA and FEMA; Industrial sickness- causes and measures to prevent industrial sickness; Role of public sector enterprises.

#### Unit III: External Sector

Role of foreign trade, trends in exports and imports, composition and direction of India's foreign trade, BOP crises and the new economic reforms- export promotion measures and the new trade policies; Foreign capital- FDI and MNC.

#### Unit IV: Economy of Nagaland

Natural resources; Population; Infrastructure and structural change in Nagaland Economy. Industrial development, prospects and problems; Agricultural systems, production, productivity and problems; Floriculture in Nagaland.

#### BOOKS

1. Agarwal, A.N, Indian Economy, Vikas Publishers, New Delhi.
2. Datt, R. and K.P.M. Sundaram, Indian Economy, S. Chand and company Ltd, New Delhi.
3. Misra, S.K. and V.K. Puri, Indian Economy- Its Development and experience, Himalaya publishing house, Mumbai.
4. Dhingra, I.C. (2001), Indian Economy: Environment and Policy, Sultan Chand & Sons, New Delhi.
5. Joshua Thomas Gurudas Das (eds 2002), Dimensions of Development in Nagaland, Regency Publications, New Delhi.
6. Joshua Thomas Gurudas Das (eds), Structural Change in North East India: Resource Industry Linkages, Akansha Publishing House, New Delhi.
7. Borthagur, DharendraNath (1992), Agricultural Development of North East Region with special reference to hill agriculture, Bee CeePrakashen, Guwahati.
8. NUTA, Economic Development in Nagaland: Prospects and Constraints.
9. Statistical Handbooks, GON; Economic Surveys (Various Issues), Government of India.
10. Pusa, Khriemenuo (2020), Floriculture in Northeast India: Special Reference to Nagaland, Mittal Publication, New Delhi.
11. Vero, Yelhi (2018), Nagaland Economy: Its Elementary Features.

# **M. A. History Syllabus**

**Under  
Choice Based Credit System**

Department of History  
ST. JOSEPH'S COLLEGE (AUTONOMOUS)  
JAKHAMA



## DETAILS OF COURSES UNDER MASTER OF ARTS IN HISTORY

1. CORE COURSE: 14 Courses (Compulsory) 4 credits each  $14 \times 4 = 56$  credits
2. ELECTIVE COURSE: 6 Courses (Choose any one in 3<sup>rd</sup> and 4<sup>th</sup> Semester) 4 credits each  $2 \times 4 = 8$  credits
3. CHOICE BASED CREDIT TRANSFER: 4 Courses, 3 credits each  $4 \times 3 = 12$  credits

### CORE COURSES

	COURSE CODE
1. Historiography and Research Methodology	MHSC 1.1
2. History of Nagaland	MHSC 1.2
3. Political History of Ancient India, c. 1500 BCE to AD 600	MHSC 1.3
4. Economy and Society in Ancient India, c. 1500 BCE to AD 600	MHSC 1.4
5. History of North East India up to 1972	MHSC 2.1
6. World Civilizations	MHSC 2.2
7. Political History of Medieval India (1206-1707)	MHSC 2.3
8. Economy, Society and Religion in Medieval India (1206-1707)	MHSC 2.4
9. British Expansion and Imperial Policy in India	MHSC 3.1
10. Gender and Society in Modern India (1800-2000)	MHSC 3.2
11. History of Europe (1453-1789)	MHSC 3.3
12. Indian Nationalism	MHSC 4.1
13. Introduction to Archaeology and Museology	MHSC 4.2
14. History of Europe (1789-1945)	MHSC 4.3

### CORE COURSES (ELECTIVE)

1. History of USA	MHSC 3.4A
2. Contemporary History of West Asia	MHSC 3.4B
3. History of East Asia: Japan (1853-2000)	MHSC 3.4C
4. Introduction to Numismatics and Epigraphy	MHSC 4.4A
5. History of Ancient and Medieval Indian Art and Architecture	MHSC 4.4B
6. History of East Asia: China (1839-2000)	MHSC 4.4C

### CHOICE BASED CREDIT TRANSFER (CBCT)

1. History of Ancient India	MHST 1.5
2. History of Medieval India	MHST 2.5
3. Indian National Movement (1885-1947)	MHST 3.5
4. Contemporary World (1945-2000)	MHST 4.5

## Master of Arts in History

1. Credits to be completed for award of the degree: 76
2. Minimum duration: 4 Semesters (two years)
3. Maximum duration: 6 Semesters (three years)

### COURSE STRUCTURE

#### Semester I

Total Credits 16+3=19

Course Code	Course Name	L+T+P	CH	CR	Course Type	Skill Based Course (Yes/No)
MHSC 1.1	Historiography and Research Methodology	3-1-0	4	4	Core	No
MHSC 1.2	History of Nagaland	3-1-0	4	4	Core	No
MHSC 1.3	Political History of Ancient India, c. 1500 BCE to AD 600	3-1-0	4	4	Core	No
MHSC 1.4	Economy and Society in Ancient India, c. 1500 BCE to AD 600	3-1-0	4	4	Core	No
CBCT	To opt from another department			3		

#### Semester II

Total Credits 16+3=19

Course Code	Course Name	L+T+P	CH	CR	Course Type	Skill Based Course (Yes/No)
MHSC 2.1	History of North East India up to 1972	3-1-0	4	4	Core	No
MHSC 2.2	World Civilizations	3-1-0	4	4	Core	No
MHSC 2.3	Political History of Medieval India (1206-1707)	3-1-0	4	4	Core	No
MHSC 2.4	Economy, Society and Religion in Medieval India (1206-1707)	3-1-0	4	4	Core	No
CBCT	To opt from another department			3		

**Semester III****Total Credits 16+3=19**

Course Code	Course Name	L+T+P	CH	CR	Course Type	Skill Based Course (Yes/No)
<b>MHSC 3.1</b>	British Expansion and Imperial Policy in India	3-1-0	4	4	Core	No
<b>MHSC 3.2</b>	Gender and Society in Modern India (1800-2000)	3-1-0	4	4	Core	No
<b>MHSC 3.3</b>	History of Europe (1453-1789)	3-1-0	4	4	Core	No
<b>MHSC 3.4A</b>	History of USA	3-1-0	4	4	Elective	No
<b>MHSC 3.4B</b>	Contemporary History of West Asia					
<b>MHSC 3.4C</b>	History of East Asia: Japan (1853-2000)					
<b>CBCT</b>	To opt from another department			3		

**Semester IV****Total Credits 16+3=19**

Course Code	Course Name	L+T+P	CH	CR	Course Type	Skill Based Course (Yes/No)
<b>MHSC 4.1</b>	Indian Nationalism	3-1-0	4	4	Core	Yes
<b>MHSC 4.2</b>	Introduction to Archaeology and Museology	3-1-0	4	4	Core	No
<b>MHSC 4.3</b>	History of Europe (1789-1945)	3-1-0	4	4	Core	No
<b>MHSC 4.4A</b>	Introduction to Numismatics and Epigraphy	3-1-0	4	4	Elective	No
<b>MHSC 4.4B</b>	History of Ancient and Medieval Indian Art and Architecture					
<b>MHSC 4.4C</b>	History of East Asia: China (1839-2000)					
<b>CBCT</b>	To opt from another department			3		

**Choice Based Credit Transfer (CBCT)**

(To be opted by students of disciplines other than Economics)

Semester I	<b>MHST 1.5</b>	<b>History of Ancient India</b>
Semester II	<b>MHST 2.5</b>	<b>History of Medieval India</b>
Semester III	<b>MHST 3.5</b>	<b>Indian National Movement (1885-1947)</b>
Semester IV	<b>MHST 4.5</b>	<b>Contemporary World (1945-2000)</b>

## CORE COURSES

### SEMESTER I

#### **MHSC 1.1: Historiography and Research Methodology**

##### **Objective**

This course is offered as a tool course, the aim of which is to train the students of history both in the theoretical and conceptual developments in historiography as well as in the technical aspects of writing history. The course also intends to acquaint students with research methodology and other basic ideas.

**Unit I:** Meaning, nature and scope of history; kinds of history and its allied subjects -sociology, political science, economics

**Unit II:** Sources of history (role of archives in historical research; criticisms of sources), Philosophy of history; Objectivity and subjectivity in history, role of individuals and institutions

**Unit III:** Ancient historiography (developments in the West and in Asia); Medieval historiography (Christian, Persian and Arabic); Modern historiography (colonial, nationalist, communalist and Marxist) and Subaltern historiography and Gender history; theories and concepts of feminism

**Unit IV:** Historical research (pre-requisites of a researcher, choice of topic); data collection; synthesis; chapterization; footnotes; endnotes and bibliography

**Unit V:** Case studies-K.A. Nilakanta Sastri, Herodotus, Arnold Toynbee, book reviews

##### **Essential Readings:**

1. E.H.Carr “What is History”, London, 1963
2. Bhattacharya, An Introduction to Historiography, 2016
3. R.G. Collingwood “The idea of history”, Madras, 1989
4. Marc Bloch, “A Historian's craft”, Knopf, 1953
5. Dray W.H “Philosophy Analysis and History”, Harper and Row, 1966
6. E.Sreedharan ,A Textbook on Historiography, 500 BC to AD 2000, Orient Blackswan, Delhi, 2004
7. Hock H. Homer “The critical method in historical writing”
8. Hobsbaum E.J. “Karl Marx pre-capitalist economic formations
9. Joan W Scott (ed) “Feminism and history”, “gender and the politics of history”
10. Gerda Lerner “The creation of Patriarchy”
11. V. Geetha “Theorizing feminism; gender”

#### **MHSC 1.2: History of Nagaland**

##### **Objective:**

The objective of the course is to familiarize the students on the history of the Nagas from pre-Colonial to the political development leading to State formation.

##### **Unit-1: Land and People**

Origin and Migration; Flora and Fauna; River system

**Unit-2: Pre-colonial:**

Pre- Colonial Naga Polity; village chief- Power and functions; village council-power and functions; Economy; Social life; law of inheritance; Relations with the Ahoms

**Unit-3: Nagas and the British:**

Annexation of Naga Hills, Consolidation of British rule and Transformation of Naga polity, Colonial Administrative Policy, Animism to Christianity.

**Unit-4: Awakening of the Nagas:**

WWI; Naga Club and the Memorandum to the Simon Commission; WWII; NNC; Hydari Agreement; Naga people's Convention and the emergence of Nagaland State.

**Unit-5: Political developments post-Statehood:**

Formation of Federal Government of Nagaland; Bilateral agreement on cease-fire; the peace mission proposals 1964; Shillong Accord; external linkages- Naga relations with Pakistan, China, United Nations.

**Essential Readings:**

1. Hokushe Sema, *Emergence of Nagaland; Socio-Economic and Political Transformation and the Future*, Vikas Publishing House.Pvt Ltd., New Delhi, 1986
2. Verrier Elwin, *Nagaland*, Spectrum Publications, Guwahati: Delhi
3. Aosenba, *The Naga Resistance Movement: Prospects of Peace and Armed Conflict*, Regency publications, New Delhi, 2001
4. Neivetso Venuh, *British Colonization and Restructuring of Naga Polity*, A Mittal Publications, New Delhi, 2005.
5. Bendangangshi, *Glimpses of Naga History*, 1993.
6. M. Alemchiba, *A Brief Historical Account of Nagaland*
7. Yuno Yusoso, *The Rising Nagas: A Historical and Political Study*, Vivek Publishing House, 1974
8. Alexander Mackenzie, *The North-East Frontier of India*, Mittal Publications, New Delhi, 2001.

**MHSC 1.3: Political History of Ancient India, c. 1500 BCE to AD 600****Objective**

The aim of this course is to introduce students to the evolution of political ideas and institutions. The emphasis is on the theories of their origins and developments from the perspective of Brahmanical and Buddhist ideologies.

**UNIT I: HISTORIOGRAPHY, SOURCES AND CONCEPTS OF INDIAN POLITY:** Theories of Kingship; Republics; Sovereignty; and state in relation to different stages of its development.

**UNIT II: VEDIC POLITICAL INSTITUTIONS:**

The concepts of Jana, Vish, Sabha, Samiti, Vidatha and Parishad; Wars and Conflicts; Pre-Monarchical State; Transition towards territorial statehood; From 'Chiefdom' to 'Kingdom'; Changing forms of rituals and Legitimation in Kingship.

**UNIT III: POST-VEDIC POLITICAL IDEAS AND INSTITUTIONS:**

State polities in the 6<sup>th</sup> century BCE- Rise of territorial states (Mahajanapadas) in Gangetic North India; Rajyas and Ganas-Sanghas; Political Conflicts and complexities leading to the growth of Magadhan Empire; Ideas of the Origin of the State in Brahmanical and Buddhist Sources.

#### **UNIT IV: MAURYAN AND POST-MAURYAN POLITIES:**

The structure of the Nanda Monarchy; The Ideal State in accordance with the Arthashastra- the Saptanga Theory of Kingship; Kingship and State under Ashoka; State structure of the Kushanas and Shakas- Divine Notion of Kingship; 'Kshatras' and 'Kshatrapies'; the Satavahana State system

#### **UNIT V: POLITICAL SYSTEM OF THE GUPTAS AND AFTER:**

Kingship: Paramountcy and Subordination; Royal land Grants and Feudal tendencies; The 'Samanta' System; Taxation System; Kingship and political structure of regional states in early Medieval India.

#### **Essential Readings:**

1. Thapar, Romila, Ashoka and the Decline of the Mauryas, Oxford University Press
2. Thapar, Romila, From Lineage to State, Oxford University Press, 1984
3. Thapar, Romila, Early India: From the Origins to AD 1300, University of California Press, 2004
4. Singh, Upinder, 2009, A History of Ancient and Early Medieval India, From the Stone Age to the 12<sup>th</sup> Century, Delhi: Pearson Longman
5. Raychaudhuri, Hemchandra, Political History of Ancient India, Oxford University Press
6. Claessen, HJM and P. Skalnik, The Early State. The Hague, 1978
7. Gonda, Jan, Ancient Indian Kingship from the Religious Point of View, Brill, Leiden, 1966
8. Kosambi, D.D., An Introduction to the Study of Indian History (Bombay), 1956
9. Roy, Kumkum, Emergence of monarchy in North India, Oxford University Press, New Delhi, 1994
10. Sharma, R.S., Aspects of Political Ideas and Institutions in Ancient India, Mac Millan, New Delhi, 1983
11. Sharma, R.S., Material Culture and Social Formations in Ancient India, Mac Millan, New Delhi, rpt, 1990
12. Chattopadhyaya, Brajadulal, The making of Early Medieval India, OUP, Delhi, 1994
13. Gurukkal, Rajan, Social Formations of Early South India, Oxford University Press, 2010
14. Veluthat. Kesavan, The Political Structure of Early Medieval South India, Delhi, 1993
15. A. S. Altekar, State and Government in ancient India, Delhi, 1992

#### **MHSC 1.4: Economy and Society in Ancient India, c. 1500 BCE to AD 600**

##### **Objective**

The purpose of this course is to familiarize students with the main trends of socio-economic developments in India from Vedic times till the Gupta Era.

**Unit I:** Historiography of ancient Indian society and economy; introduction to sources, methods and approaches; problems of interpretation and analysis

**Unit II:** Early Vedic Economy and society: forms of property and forces of production-cattle and its importance; booty capture and redistribution; religious practices and ideologies-forces of change.

**Unit III:** Iron and Later Vedic Period: PGW; expansion of agriculture and economic growth; social differentiation; Later Vedic sacrificial ritual/ Brahma and Ksatra elements

**Unit IV:** NBP economy and society; socio-economic base of the Maurya Empire-the agrarian base, commodity production, trade, sources and methods of taxation; social relevance of Dharma

**Unit V:** Changes in the agrarian structure AD 300-600; changing concepts of land ownership; practice of land grants; nature of trade and commerce; Varna, proliferation of Jatis; changing norms of marriage and property.

**Essential Readings:**

1. D. D. Kosambi, *An Introduction to the Study of Indian History* (2nd Revised edition, Bombay, 1975)
2. D. D. Kosambi, *The Culture and Civilization of Ancient India in Historical Perspective*, 2nd Reprint, Delhi, 1975
3. D. N. Jha, *Studies in Early Indian Economic History*, Delhi, 1980
4. Romila Thapar, *Ancient Indian Social History*, New Delhi, 1978
5. Upinder Singh, *A History of Ancient and Early Medieval India; From the Stone Age to the 12th Century*, Pearson, 2009
6. Romila Thapar, *The Penguin History of Early India*, Penguin Books, New Delhi, 2002
7. R.S Sharma, *India's Ancient Past*, Oxford University Press, reprint 2016

## SEMESTER II

### MHSC 2.1: History of North East India up to 1972

**Objective**

This course is designed to acquaint the students with the history of North East India from the earliest times to the major trends of the political, social and economic developments in North East India till 1972.

**Unit I: Early Northeast India:**

Neolithic and Megalithic Cultures; Socio-Economic History; religion and society.

**Unit II: Monarchies in Medieval Northeast India:**

Origin of the Monarchies- Ahom state, Cachar, Jaintia, Manipur and Tripura, Decline- causes and circumstances.

**Unit III: British Policy in North East India:**

Early British contact and their policy towards NE India; First Anglo-Burmese war and the treaty of Yandaboo; Annexation of NE- Assam, Anglo-Khasi war, Lushai Hills; Patterns of British Administration; Impact- Land revenue, growth of Industries, transport and communication, Western Education.

**Unit IV: Nationalists Movement in Northeast India:**

Partition of Bengal; Non-Cooperation Movement; Civil Disobedience Movement; Quit India Movement; Indian National Army (INA) and the North East; Women and the Nationalist Movement in North East India.

**Unit V: Government and Politics since 1947:**

The sixth Schedule; the structure, powers and functions of the District Councils; formation of states- Meghalaya, Mizoram, Manipur, Tripura, Arunachal; Northeast States Reorganization Act.

**Essential Readings:**

1. T.C. Sharma, *The Neolithic Pattern of North eastern India in Recent Research in Indian Archaeology and Art History* edited by Nagaraja Rao, Delhi 1981.
2. A.H. Dani, *Prehistory and Protohistory of Eastern India*, Calcutta, 1960.
3. J.P. Singh and G. Sengupta (eds), *Archaeology of Northeastern India*, New Delhi, 1991.
4. B. K. Barua, *Cultural History of Assam*, Guwahati, 1941
5. B.N. Mukherjee, *External Trade of Northeastern India in the Early Period*, Delhi, 1991.
6. J.P. Bhattacharjee, *Social and Polity Formation in Pre-Colonial Northeast India*, New Delhi, 1991.
7. N.N. Bhattacharjee, *Religious Culture of Northeastern India*, Delhi 1995.
8. E.A. Gait, *History of Assam*, Guwahati, 1963.
9. N.N. Acharya, *History of Medieval Assam*, Guwahati, 1966.
10. U.N. Gohain, *Assam in the Ahom Age*, Jorhat, 1959.
11. J. Roy, *History of Manipur*, Calcutta, 1963.

12. N.R. Roy Chaudhury, Tripura through the Ages, Delhi, 1982.
13. A. Mackenzie, The Northeast Frontier of India, Mittal Publications, New Delhi, 1994.
14. S.K. Bhuyan, Early British Relations with Assam, Shillong, 1949.
15. H.K. Barpujari, Assam in the days of the Company, NEHU, Shillong, 1996.
16. V. VenkataRao, Government and Politics in Northeast India, Vol.I& II, S.Chand and co., Allahabad, 1983.
17. P.S. Dutta (ed), Autonomy Movements in Northeast India, Har-Anand, Delhi, 1992.
18. Anuradha Dutta, Assam in the Freedom Movement, Calcutta, 1991.
19. A. Guha, Planter-Raj to Swaraj; Freedom Struggle and Electoral Politics in Assam, 1826-1947, New Delhi, 1977.
20. P. Goswami, The History of Assam: From Yandaboo to Partition, 2012

## **MHSC 2.2: World Civilizations**

### **Objective**

The course seeks to familiarize the students with the earliest and the most spectacular civilizations of antiquity. The different aspects belonging to the ancient world will be thoroughly examined in the light of the new researches in the mentioned field.

### **Unit I: Mesopotamian Civilization:**

Ancient Sumer, Babylonian civilization; Trade with special reference to external trade with the Gulf and India; Religion and society in ancient Mesopotamia.

### **Unit II: Egyptian Civilization:**

Geographical background and emergence of the state in the Nile Valley; Religion and the socio-economic organization of temples in Ancient Egypt; the Egyptian burial system and the Pyramids; achievement of the Egyptian civilization with particular reference to art and architecture.

### **Unit III: Chinese Civilization:**

Huang-ho valley civilization; peasants and slave in the production process; the rise of Chous of western China at Huang-ho valley; expansion of civilization up to the Yangtze valley; The Great Wall of China-an engineering feat, effective military /labour organization.

### **Unit IV: Greece-Roman Civilization:**

Evolution of city states, Sparta and Athens; kingship as the basis of social organization; transition of more complex social institutions culminating in 'oligarchic' and 'democratic' forms of government. The rise of Rome; transition from monarchy to republic to empire; the socio-economic base; role of the army in the process of civilization

### **Unit V: Harappan Civilization:**

Nomenclature; Discovery: Changing perspectives over the years; Historiography in relation to origin; diversity of Harappan economic base; material culture; decline of urban life.

### **Suggested Readings:**

1. Edward MacNall Burns, Philip Lee Ralph, Robert E. Lerner, Standish Meacham, World Civilizations, Vol A, W. R. Goyal Publishers and Distributors, Delhi, 1991
2. Wallbank and Taylor "History of World Civilization"
3. Amar Farooqui "Early Social Formations", Manak Publication, 2012
4. H.G wells "A Short History of the World"
5. B.V. Rao "History of World Civilization"
6. Rakesh Kumar, Ancient and Medieval World, Sage Publications, 2018
7. John A Wilson, The Culture of the Ancient Egypt, Chicago, 1957



8. D. Brendan Nagle, *The Ancient World: A Social and Cultural History*, New Jersey, 1989
9. A. R. David, *The Ancient Egyptians: Religious Beliefs and Practices*, London, 1982
10. H. W. Saggs, *The Greatness that was Babylon*, New York, 1962
11. AHM Jones, *History of Rome Through the Ages*, London, 1968
12. C L Redman, *The Rise of Civilization*, New York, Freeman, 1978
13. V Gordon Childe, *What Happened in History*, Penquin Books, 1977, reprint
14. Will Durant, *Our Oriental Heritage*, Simon and Schuster, New York, 1963
15. H. G. Wells, *The Outline of History: Being a Plain History of Life and Mankind*, Surjeet Publications, New Delhi, 2<sup>nd</sup> Reprint, 2007
16. Bridget and F B Alchin, *The Rise of Civilization in India and Pakistan*, 1983
17. Irfan Habib, *A People's History*, vol.II, Indus Civilizatio, 2002
18. D. K. Chakrabarti, *The Archaeology of Ancient Indian Cities*, Paperback, 1997
19. Upinder Singh, *A History of Ancient and Early Medieval India; From the Stone Age to the 12th Century*, Pearson, 2009

### **MHSC 2.3: Political History of Medieval India (1206-1707)**

#### **Objective**

This course is intended to acquaint the students with the process of evolution and culmination of Sultanate and Mughal Empire and also to familiarize the students with the political ideas and institutions of Medieval India so that they may discover the conceptual frame work of the Sultanate and Mughal administration.

**UNIT I:** Turkish invasion of India under Shihabuddin Ghuri and Qutub- ud-din Aibak, Establishment and territorial consolidation of the Delhi Sultanate(1206-1236), Khalji revolution and its significance; JalaluddinKhalji and AlauddinKhalji – policies, Indianization of the higher echelons of political and administrative authority, conquest and annexation of South India.

**UNIT II:** Expansion of the Sultanate under Ghiyassuddin and Muhammad Bin Tughlaq – early problems, exodus to Deogiri, Khurasan and Karachi expeditions, nobility, transfer of capital and its consequences, bureaucracy of Tughluq, Firoz Shah Tughluq- reforms in administration, campaigns, construction and welfare measures, Decline of the Sultanate, Struggles for dominance; the Saiyyids and Lodis.

**UNIT III:** Central Asian experience of Babur and the battle of Panipat (1526); role of artillery, relations with Afghan nobles and Rajput chiefs; Humayun's problems, Gujarat policy and relations with nobility, Afghan despotism and rise of Sher Shah Sur to power; contribution and fall of the Sur dynasty.

**UNIT IV:** Expansion and consolidation of the empire; Emperor Akbar- New Imperial System and administration; Mansab and Jagir, Mughal Empire in 1605- succession, crisis, role of Akbar Shahi nobility, Nur Jahan- her Junta, Mansabdari system under Shah Jahan and Aurangzeb in 17th century.

**UNIT V:** Crisis of the Mughal Empire; Aurangzeb- the imperial elite and the Deccan wars, Rise of Marathas under Shivaji; Popular revolts within the Mughal empire- Jats, Satnamis, Afghans and the Sikhs- decline of the Mughal empire and the diverse interpretations.

#### **SUGGESTED READINGS:**

1. Mukhia, Harbans, “The Mughals of India”, Blackwell Publishing Ltd., UK, 2004
2. S. Subramanyam, “The Mughal States, 1526-1750”, OUP, Delhi, 1998.
3. Chandra, Satish, “Medieval India from Sultanat to the Mughals, part 2”, Har-Anand Publications, 2005.
4. Mehta, J.L., “Advanced Study in the History of Medieval India, Vol.2”, 1981.
5. Siddiqui, I.H. “Some aspects of Afghan Despotism”, Aligarh, 1968.

6. Tripathi, R.P. "Rise and Fall of Mughal Empire", Central Book Depot, Allahabad, 1963
7. Ali, Athar.M. "Mughal India, Studies in Polity, Ideas, Society and Culture", OUP, 2006.
8. Habib, Irfan, "The Agrarian System of Mughal India, 1556-1707", OUP, 1963
9. Sarkar, Jadunath, "Shivaji and His Times" Orient Longman, New Delhi, 1992
10. Chandra, Satish, "Essays on Medieval Indian History", OUP, 2003

## **MHSC 2.4: Economy, Society and Religion in Medieval India (1206-1707)**

### **Objective**

To introduce students to the study of Medieval Indian Economy, Society and religious trends and tendencies along with interaction of each other.

**UNIT I:** Medieval economy and society; prominent features, Agricultural production and land revenue system under the Sultanate, organisation of production, rural commerce, urban market and prices, currency system, merchants, brokers, Sarrafs, artisans and the slaves, the ruling class and social composition of the nobility in the Sultanate.

**UNIT II:** Mansabdari and Jagirdari system; origin and development, contribution to the Mughal economy, modifications, the Jagirdari crisis and its impacts, Zamindars, Faujdars, Zamindari rights; nature and political role of the Zamindars.

**UNIT III:** Agrarian system; nature and extent of control, land revenue experiments, re-organisation of the Mughal Subahs, Land revenue demand and its impacts on the peasant economy; peasant resistance; significance and impacts, Industrial activities in the Mughal period.

**UNIT IV:** Debates on the nature of Medieval Indian economy; free peasant economy, potential capitalistic development.

**UNIT V:** Religious developments in the Medieval period: Bhakti movement in North India- Vaishnava Bhakti , Ramanuja, Vallabhacharya, Vaishnava Bhakti in Bengal and role of Chaitanya, Sankaradeva and emergence of Neo-Vaishnavism in Assam. Sufism: Growth in Islamic world, Chishti Silsilah, Suhrawardi Silsilah, Departure from earlier traditions; Sufis of Brahmaputra and Barak valleys. Sikhism: Guru Nanak as a non- conformist, emergence of the Nanak Panth, Sikh Gurus, militarism, emergence of Khalsa, significance and impacts.

### **SUGGESTED READINGS:**

1. Siddiqui, N.A. "Land Revenue System under the Mughals" Bombay, 1970
2. Mukhia, Harbans, "Perspectives on Medieval History" Delhi, 1993.
3. Moreland, W.H., "Agrarian System of Moslem India", Delhi, 1968
4. Habib, Irfan, "Agrarian System of Mughal India", Delhi, 1966
5. Habib, Irfan, "Economic History of India, Vol, I" Delhi, 1971
6. Rashid, A. "Society and Culture in Medieval India" Calcutta, 1969
7. Qureshi, I.H. "Administration of the Sultanat of Delhi", Delhi, 1971
8. Jaiswal, Suvira, "The Origin and Development of Vaishnavism" Delhi, 1967
9. Nizami, K.A. "Some Aspects of Religion and Politics in India during the 13<sup>th</sup> Century" Delhi, 1968
10. Macleod, W.H. "Guru Nanak and the Sikh Religion", Oxford, 1968
11. Nigam, S.B.P, "Nobility under the Sultans of Delhi, A.D. 1206-1398" Munshiram Manoharal Pub., 1967
12. Habibullah, A.B.M. "The Foundation of Muslim Rule in India" Central Book Depot, 1961
13. Habib, M., Nizami, K.A., "Comprehensive History of India: Delhi Sultanate, A.D. 1206-1526 Vol V", Peoples Publishing House, 1970.

## SEMESTER III

### MHSC 3.1: British Expansion and Imperial Policy in India

#### Objective

The course is designed to provide students an overview of the foundation of British rule and British imperialism in India.

**Unit I:** Historiography of British rule in India; decay and disintegration of the central Indian authority; European settlements, trade and commerce

**Unit II:** British expansionist policies (Warren Hastings to Dalhousie); Relations with Mysore, Marathas and Sikhs

**Unit III:** The consolidation of British power in India: Land Revenue; the armature of the colonial state: army, law and police, ICS

**Unit IV:** Colonial ideology and colonial rule: Orientalism, Utilitarianism, Whiggism; Missionary activity and Evangelicalism; The Modern Education, Press and the idea of reform of Indian Society.

**Unit V:** Popular resistance: Moplah Uprisings; The Great Revolt of 1857; Pabna; Kol; Santhal; Indigo Uprisings.

#### Essential Readings:

1. R. K. Mukherjee, Rise and Fall of the East India Company, Bombay, 1973
2. H. Dodwell, Cambridge History of India, Vol. V, CUP, London, 1986
3. Lawrence James, Raj: The Making and Unmaking of British India, London, 1998
4. P. E. Roberts, History of British India, London, 1970
5. P. Lawson, The East India Company: A History, London, Longmans, 1993
6. R. Barnett, Rethinking Early Modern India, Manohar, New Delhi, 2002
7. Sekhar Bandyopadhyay, From Plassey to Partition: A History of Modern India, Orient Longman, New Delhi, 2004
8. AR Desai, Social Background of Indian Nationalism, Popular Prakashan, Reprint, Mumbai, 2008
9. Bipan Chandra, History of Modern India, Orient Blackswan Private Ltd, Hyderabad, 2009

### MHSC 3.2: Gender and Society in Modern India (1800-2000)

#### Objective

This course is aimed at introducing the students of History to the basic concepts of gender, feminism and gender history. It also intends to explore the issue of women history during the colonial era and also to sensitize students about their struggle as well as progress and their multidimensional activities.

**Unit I:** Conceptual issues: Patriarchy and Patriliney; Matriarchy and Matriliney; Feminism and Women's liberation; Gender, rights, social values, Man and history.

**Unit II:** Women in the nationalist movements; women in North East India, Khasi and Garo Matriliney; women in the patriarchal tribes; women and environment-Chipko movement

**Unit III:** Women and Social Reform movements in colonial India; Gandhi and Nehru on women; Women and Religion- Hindu, Christian, Muslim, Parsi

**Unit IV:** Women in private/public sphere: Domesticity and Middle Class, education and print Media; popular culture and women.

**Unit V:** Caste and Gender; Dalit feminism; Law and Women's Rights: Dowry, Female Infanticide, Rape, Land Rights; Agency and Activism: Women's Movements and voices.

### **Essential Readings**

1. A.M. Jaggar, *Feminist Politics and Human Nature*, New Jersey, 1983
2. J. Krishnamurthy (ed.), *Women in colonial India: Essays on Survival, work and the state*, OUP, New Delhi, 1999
3. John Charvet, *Feminism* (J. M. Dent and sons Ltd.), London, 1982
4. S. Sen, *Women in Meghalaya*, Daya Publishing House, Delhi, 1992
5. Rosalind Miles, *The Women's History of the world*, Harper Collins, 1993 edition
6. Yuval-Davis, Nira, *Gender and Nation*, Sage, London, 1997
7. Geraldine Forbes, *Women in Modern India*, Cambridge University Press, Cambridge, 1996
8. Radha Kumar, *The History of Doing: An Illustrated Account of Movements for Women's Rights and Feminism in India 1800-1990*, Delhi, 1993
9. AnupamaRao (ed), *Gender and Caste (Kali for Women, Delhi, 2003)*
10. Joan W Scott (ed), "Feminism and history", "gender and the politics of history"
11. GerdaLerner ,*The creation of Patriarchy*
12. V. Geetha, *Theorizing feminism; gender*
13. K. Manuja Devi, *Gender Issues: Empowerment of Women*, 2014
14. U. Mahanta, *An Introduction to Women's Studies*, 2015
15. Deepti Misri, *Beyond Partition-Gender, Violence and Representation in Post colonial India*, 2015

### **MHSC 3.3: History of Europe (1453-1789)**

#### **Objective**

This course is designed to provide an understanding on the forces and trends that shaped the history of Europe from the fall of Constantinople to the beginning of French Revolution.

**Unit I:** Feudalism: Transition from Ancient Society to Feudal Society; social hierarchy; Feudal Mode of production; Decline; the Feudal debate

**Unit II:** Renaissance: Historiography; Renaissance of Thought and Literature; Artistic and Scientific accomplishments

**Unit III:** Overseas Discoveries and Protestant Reformation: Monopoly of trade, colonization and political dominion: Portugal and Spain; the Spread of Protestantism; the Catholic Reformation

**Unit IV:** The economy and society of Early Modern Europe: Capitalism, Mercantilism and Commercial Revolution; colonization and overseas trade: English, Dutch, French

**Unit V:** Absolutism in Europe: The Social Base; Absolutism in England- the Tudors and the early Stuarts; The Making of French Absolutism

#### **Essential Readings:**

1. Edward MacNall Burns, Philip Lee Ralph, Robert E. Lerner, Standish Meacham, *World Civilizations*, Vol. B, W. R. Goyal Publishers and Distributors, Delhi, 1991
2. Peter Burke, *The Historical Anthropology of Early Modern Europe: Essays on Perception and Communication*, CUP, 1986
3. Paula Findlen (ed), *The Italian Renaissance: The Essential Readings*, Blackwell, 2002
4. Steven E. Ozment, *When Fathers Ruled: Family Life in Reformation Europe*, Harvard University Press, 1983
5. MeenaxiPhukan, *Rise of Modern West, Social and Economic History of Early Modern Europe*, Macmillan India Limited, 1998, Reprint 2006
6. CJH Hayes, *Modern Europe to 1870*, Surjeet Publications, Delhi, Reprint 2002

## SEMESTER IV

### MHSC 4.1: Indian Nationalism

#### Objective

The course is intended to discuss the origin and growth of Indian nationalism during British colonial rule in India, with emphasis on the concepts and issues involved in the study of modern nationalism.

**Unit I:** Nationalism and Indian Nationalism-approaches; Economic critique of Colonialism, ideological dimension

**Unit II:** Origin of Indian Nationalism; press and public opinion; Tagore's nationalism and Gandhi's Nationalism; Early organizations; INC

**Unit III:** Partition of Bengal and Swadeshi Movement; Home Rule Movement; Militant Nationalism; Rise of Communalism

**Unit IV:** The beginning of Gandhian politics- Champaran, Kheda, Ahmedabad, Rowlatt Satyagraha; Non-Cooperation, Civil Disobedience

**Unit V:** National movement during World War II- Quit India, RIN Mutiny; INA; Constitutional developments; Partition of India.

#### Essential Readings:

1. Bipan Chandra, India's Struggle for Independence, Vikas Publisher, New Delhi, 1998
2. B. R. Nanda, Essays in Indian Nationalism, New Delhi, 1978
3. Anil Seal, The Emergence of Indian Nationalism, London, Cambridge University Press, 1971
4. R.P. Dutt, India Today, Calcutta, 1999
5. Judith Brown, Gandhi's Rise to Power, OUP, London, 1997
6. N. S. Bose, Quest for Status and Freedom, Calcutta, 1986
7. M. K. Gandhi, The Hind Swaraj, Various editions: Pared., and T. Surhud, S. Sharma ed. Etc
8. R N Tagore, Nationalism, With an Introduction by E. P. Thompson, Calcutta, Rupa, 1992
9. J R McLane, Indian Nationalism and the Early Congress, Princeton, N.J: Princeton University Press, 1977
10. SekharBandyopadhyay, From Plassey to Partition: A History of Modern India, Orient Longman, New Delhi, 2004
11. AR Desai, Social Background of Indian Nationalism, Popular Prakashan, Reprint, Mumbai, 2008
12. Bipan Chandra, History of Modern India, Orient Blackswan Private Ltd, Hyderabad, 2009

### MHSC 4.2: Introduction to Archaeology and Museology

#### Objective

The course is aimed at introducing to the students about the nature of archaeological data, its methods and the multi disciplinary approaches. The course also intends to introduce the students about museum studies; its aspects and functions and to familiarize them on the development of museums in India.

**Unit I:** Definition, nature and scope of Archaeology; its relationship with anthropology and History; Kinds of Archaeology in India; Principle and Methods of Exploration

**Unit II:** Classical archaeology and Antiquarianism; Paleolithic archaeology and Cultural Evolutionism; Functionalism and processual archaeology; excavation and dating process

**Unit III:** Establishment of Asiatic Society; Alexander Cunningham and the establishment of the first survey; Curzon and the new era in Archaeology; Mortimer Wheeler and the introduction of new scientific techniques in Indian archaeology

**Unit IV:** History of Museum movement in the world; aspects and functions of Museum; major types of museum around the world

**Unit V:** Museum development in India; museum and tourism in India; important museums in India- National Museum, New Delhi, Prince of Wales Museum Mumbai, Safdar Jung Museum Hyderabad, Indian Museum Kolkata, Industrial Museum Bangalore.

**Essential Readings:**

1. G. Clark "Archaeology and Society", London, 1966,
2. F Hole and R. Heizer "An Introduction to Pre-Historic Archaeology" New York, 1969
3. K.M. Srivastava "New Horizons of Indian Archaeology" New Delhi, 1976
4. K. Greene, Archaeology: An Introduction, London, 1983
5. D. K. Chakravorti, A History of Indian Archaeology -from the beginning to 1947, New Delhi, 1988
6. D. P. Agarwal et al: Essays in Indian Archaeology, Delhi, 1976
7. Nigam M.L. "Fundamentals of Museology"
8. Dwivedi V.P. "Museums and Museology-New Horizons"
9. Rajan K. Archaeology: Principles and Methods
10. Fleming S. "Dating in Archaeology"
11. Usha Agarwal, Museums of India: a Directory, 2013

**MHSC 4.3: History of Europe (1789-1945)**

**Objective**

This course is designed to provide an understanding of modern European history and its significant political developments from the French Revolution to the end of World War II

**Unit I:** French Revolution: The coming of the Revolution; the crises of the monarchy and beginning of National War; Triumphant Jacobinism; the Reign of the Directory

**Unit II:** Napoleonic era and its impact: The Vienna Settlement; Metternich era-forces of conservatism and restoration of old hierarchies

**Unit III:** Origins of the Industrial Revolution: Divergence debate; predominance of agriculture and industry

**Unit IV:** Nationalism and Liberalism: The Unification Era (Italy and Germany); The Eastern Question- Crimean War (1854-56); Congress of Berlin (1878) and Balkan Wars of 1912-13, the World at War (1914-1918)

**Unit V:** Post World War I: Armistice and Peace- The Paris Conference; Rise of Totalitarianism; ideology and appeal- Nazism and Fascism; outbreak of 2nd World War and the Peace Settlement.

**Essential Readings:**

1. Edward MacNall Burns, Philip Lee Ralph, Robert E. Lerner, Standish Meacham, World Civilizations, Vol C, W. R. Goyal Publishers and Distributors, Delhi, 1991
2. AJP Taylor, The Struggle For Mastery in Europe (1848-1918), Oxford University Press, New Delhi, 2000
3. Asa Briggs and Patricia Clavin, Modern Europe, 1789-Present, Pearson Education Ltd, New Delhi, 2009
4. C J H. Hayes, Contemporary Europe Since 1870
5. Norman Lowe, Mastering Modern World History, Palgrave Macmillan, reprint 2016

**ELECTIVE COURSES**

(Choose any one in each semester)

**SEMESTER III****MHSC 3.4A: History of USA****Objective**

The paper is designed to make the students aware of the background, scope and various trends that shaped the history of USA and analyzing its effects on world politics.

**Unit I:** The Discovery of America with special reference to John Cabot's Journey; the Exploration of the new Land (Daniel Boone); the founding of the 13 colonies; The American war of independence; Philadelphia Convention and its result

**Unit II:** USA's stand in world politics with regard to Monroe Doctrine, repercussions of the Jacksonian Democracy. The American Society pre-Civil War Period; The Civil War; Domestic and Foreign Affairs; The Reconstruction Era and Black's Emancipation

**Unit III:** Industrial Revolution in America; Labour Movement and Populism in America; Agricultural Boom and its Effect; Progressive Movement under Roosevelt; William Howard Taft & Wilson

**Unit IV:** American Expansion and Imperialism; USA and her Neighbours; Big stick-Dollar Policy; USA's Entry in WWI; the Economic Depression of 1929; New-Deal Era

**Unit V:** Foreign Policy of America prior to Pearl Harbour Incident; USA and WWII; Cold War Era; USA as world super-power.

**Essential Readings:**

1. Charles Seller, A Synopsis of American History, Vol. 1 and 2, Macmillan India, Delhi, 1990
2. Subramanian N. "A History of the USA", Asian Printers Coimbatore, 2006
3. John Spencer Bassett, "A Short History of The United States Of America" 1492-1938
4. Standley L. Gallman, The Cambridge Economic History of the USA, OUP, Cambridge, 1996
5. Michael Kraus, The United States upto 1865, Surjeet Publications, Delhi, 1989
6. Foster Rhea Dulles, The U.S. since 1865
7. Julius Prath, History of US Foreign Policy. Prentice Hall, USA, 1972
8. H. U. Falkner, American Economic History, Harper and Radiant, New York, 1960
9. H. U. Falkner, Social and Cultural History of USA, New Delhi, 1996
10. Oscar Hanolin, A New History of the People of US, Sterling Publishers, Delhi, 1967

### **MHSC 3.4B: Contemporary History of West Asia**

#### **Objective**

The objective of this course is to familiarize the students with the political developments and foreign policies relating to oil politics in West Asia

**Unit I:** Strategic importance of the region; Disintegration of the Ottoman Empire; The First World War and its impacts; Mandate System; Discovery of oil in the region

**Unit II:** World War II and its impacts on the Arab world; Rise of Arab Nationalism; Zionism; Birth of Israel; PLO

**Unit III:** Suez Canal crisis; 6 days war; Non- Aligned Movement; Yom Kippur War; Camp David Accord; Entry of superpowers in the Middle East's politics 1950-1970

**Unit IV:** Important personalities of the region: Mustafa Kemal Pasha (Turkey); Nasser (Egypt); Anwar Al-Sadat(Egypt); Khomeini(Iran);Ibn Saud(Saudi Arabia)

**Unit V:** Oil boom, Oil crisis, OPEC: Iran-Iraq war; Occupation of Kuwait by Iraq; Rise and fall of Saddam Hussein; US policy towards the Middle East till 9/11.

#### **Suggested Readings:**

1. Bannerjee JK "The Middle East"
2. Calvocoresi, Peter "World Politics since 1945"
3. Stephen Hemsly "Oil in the Middle East"
4. Wint, Guy, and Peter Calvocoresi "The Middle East in Crisis"
5. Peter Mansfield "A History of the Middle East"
6. YahaAramjani, Middle East, Past and Present, Prentic Hall, INC, New Jersey, 1970
7. William Yale, The Near East: A Modern History, The University of Michigan Press, 1958, USA
8. George Lenezowski, The Middle East in World Affairs
9. Norman Lowe, Mastering Modern World History, Palgrave Macmillan, reprint 2016

### **MHSC 3.4C: History of East Asia: Japan (1853-2000)**

#### **Objective**

The paper aims to provide the students to know Japanese history after the opening up of Japan; Japan's modernization and its emergence as first world power; post WWII developments and Japan's role in World politics.

**Unit I:** Historical background: Feudal Japan; Tokugava Shogunate; Opening of Japan; End of Tokugava Shogunate

**Unit II:** Meiji Era: Meiji Restoration; Meiji Constitution; Emperor's Ideology and nationalism

**Unit III:** Modernization of Japan: Political, Economic and Social

**Unit IV:** Expansion of Japan: Sino-Japanese war; Anglo-Japanese Treaty; Russo-Japanese war; Japan and WWI; Washington Conference

**Unit V:** Constitutionalism and its decline: Militarism; WWII and US occupation; Economic Resurgence of Japan; Foreign Policy after 1952



**Essential Readings:**

1. William G. Beasley (Ed), *Modern Japan*, George Aleen and Unwin Ltd., London, 1975
2. Bordon, Hugh (Ed), *Japan*, Cornell University Press, New York, 1951
3. Buss, Claude, A, *Asia in the Modern World*, Macmilan, 1964
4. David, H., James, *The Rise and Fall of the Japanese Empire*, London, 1951
5. DubeyPrakash Kumar, History of China and Japan, Dominant Publishers & Distributers Pvt Ltd., 2017
6. Dunas, Peter, *The Rise of Japan*, Boston, 1967
7. Liaingstone I., Moore J. etc. (ed), *Imperial Japan (1800-1945)*, Penguin Books.
8. A.K. Singh, *History of Far East in Modern Times*, Surjeet Publications, Delhi, 1993
9. P.K. Dubey, History of China and Japan, 2014.

## SEMESTER IV

### MHSC 4.4A: Introduction to Numismatics and Epigraphy

**Objective**

The broad aim is to acquaint students with the basic understanding of numismatics and epigraphy in Indian context and also its growth, features and variations in different ages.

**UNIT I:** Definition of epigraphy and numismatics; its importance in history writing; the evolution of epigraphic research in India

**UNIT II:** Origin of writing; History of writing in India; classifying inscriptions on the basis of language, script and purport; Indus script and its decipherment

**UNIT III:** The origins and development of early historic Indic scripts with special reference to Ashokan Brahmi script; Kharoshti script; Types of Inscriptions; Format of Inscriptions; Writing material-authenticity

**UNIT IV:** Origin of coinage; early Indian coins; Punchmarked coins; Cast coins; Tribal coins and coins of foreigners

**UNIT V:** South Indian coins: Satavahanas; Chalukyas; Pandhyas; Cholas; Hoysala, Vijayanagar coins; Metals and standard- Technology

**SUGGESTED READINGS:**

1. Buhler, Georg "Indian Paleography", New Delhi, 2004, Munshiram Manoharlal
2. Dani, A.H "Indian Paleography", New Delhi, 1997, Munshiram Manoharlal
3. G.H Ojha, The Palaeography of India, New Delhi, 1993
4. Krishna Muthy . Y.S. "Sangam Age-Tamil Coins"
5. Sivaramamurty C. "Indian Epigraphy and South Indian Scripts, Bulletin of the Madras Government Museum"
6. K. V. Ramesh, Indian Epigraphy, Vol. 1, 1984, Delhi, SandeepPrakashan
7. D.C. Sircar, Indian Epigraphy, Delhi, 1965, MotilalBanarsidass
8. Parmeshwari Lal Gupta, Coins: The Source of Indian History, 1981
9. BirbalSahni, Technique of casting Coins in Ancient India, 1945
10. J. N. Tiwari and P.L. Gupta, A Survey of Indian Numismatography, JNSI, VOL. XXIII, 1961

## **MHSC 4.4B: History of Ancient and Medieval Indian Art and Architecture**

### **Objective**

To understand the process of the evolution of Indian art and architecture; development of various art forms and to acquaint students with the growth, features, styles and regional variations in the field of Indian art and architecture.

**Unit I:** The earliest architecture styles-rock art and structural; the evolution of Buddhist architecture from Maurya to Post-Gupta times; early Indian schools of sculpture- Gandhara, Mathura, Sarnath, Sanchi, Amravati and Nagarjunakonda.

**Unit II:** Jaina and Brahmanical temple styles-rock cut, structural, free standing; Nagara, Vesara, Dravida and regional schools of architecture

**Unit III:** Early Indian painting: major phases of development in Ajanta mural; classical style, regional styles, interpreting the portraits in the historical context

**Unit IV:** Medieval Architecture: Historiography; architecture under Akbar, Jahangir, Shah Jahan, Aurangzeb and Later Mughals; Features

**Unit V:** Medieval Indian Painting: Historiography; Development of Painting-Miniature Portrait, Book Illustration, European, Asiatic and Indian influences. Pahari Paintings-Kangra, Basoli and Garhwal; Regional Paintings- Rajput Paintings and Deccani Tradition

### **Essential Readings:**

1. Stela Kramrisch, Art of India: Traditions of Indian Sculpture, Painting and Architecture, London, 1965
2. P Brown and G Watts, Arts and Crafts of India: A Descriptive Study, New Delhi, 1980
3. K V Soundara Rajan, Glimpses of Indian Culture, History and Architecture, Delhi, 1980
4. James Burgess and Fergusson, Cave Temples of India, New Delhi, 1969
5. V. Dehajia, Early Buddhist Rock Temples: A Chronological Study, London, 1972
6. P Chandra(ed), Studies in Indian Temple Architecture (American Institute of Indian Studies), 1975
7. S K Saraswati, A Survey of Indian Sculpture, New Delhi, 1975
8. Steven Kossak, Indian Court Painting: 16<sup>th</sup> -19<sup>th</sup> Century
9. Catherine B. Asher, Architecture of Mughal India
10. Amir Ansari, A Handbook of Islamic Architecture, 2011
11. M. Juneja, Architecture in Medieval India: Forms, Contexts, Histories, 2008

## **MHSC 4.4C: History of East Asia: China (1839-2000)**

### **Objective**

The paper aims to provide the student with a detailed knowledge of modern Chinese history; China's relation with other powers; China's economic and military resurgence and the impact of all these on world politics.

**Unit I:** China in the 19<sup>th</sup> century: Background-European Trading companies and China; Opium Trade and Impact of Opium wars; Taiping Rebellion; Hundred Day's Reforms

**Unit II:** Chinese Revolutions: Boxer Rebellion; Sun-Yat Sen and the Nationalist Revolution 1911; Chiang Kai-Shek and Koumintang

**Unit III:** Rise and Growth of Communism: Impact of Russian Revolution on China; 4<sup>th</sup> May Movement; Formation of Chinese Communist party; C.C.P.- K.M.T Conflict-Long march

**Unit IV:** Chinese Foreign Policy: USA, USSR, India, Taiwan

**Unit V:** Modernization of China: Agriculture, Science and Technology, Industry, Military

## Essential Readings:

1. B. R. Chatterji, *Modern China: A Short History*, Meenakshi Prakashan, Meerut, 1969.
2. Beckmann, G. M., *The Modernisation of China and Japan*, Harper and Row, New York, 1962.
3. Benewick & others; *China in the 1990's*, Macmillan, Houndmills, 1995.
4. C. P. Fitzgerald, *The Birth of Communist China*, Penguin Books 1960. Dietrich & others, *People's China: A Brief History*, Oxford University Press, New York, 1998.
5. Harrison, S., *The Story of Long March-The Untold Story*, London, 1985.
6. Hsu & others; *China-History: Rise of Modern China*, Oxford University Press New York, 1995.
7. Jean-Pierre Brule, *China Comes of Age*, Penguin Books 1971.
8. Gupte R.S., *History of Modern China*, Sterling Publishers Pvt. Ltd, Bangalore 1981.
9. P K Dubey, *History of China and Japan*, 2014

## CHOICE BASED CREDIT TRANSFER

(To be opted by students of other discipline)

### SEMESTER I

#### MHST 1.5: History of Ancient India

##### Objective

The paper aims to familiarize the students with ancient Indian political, social and economic history.

**Unit I:** The Harappan Civilization: Nomenclature; settlement patterns and town planning; socio-economic and political organizations; religious beliefs and practices; decline

**Unit II:** Vedic Age: the Aryan question; settlement patterns; political organization; Social stratification; economic developments; Religious beliefs and practices

**Unit III:** Changing Political Formations: rise of Mahajanapadas; Maurya Empire- political structure, Ashoka's Dhamma; Post-Maurya polities with reference to the Kushanas and Satavahanas

**Unit IV:** Towards Early Medieval: the Gupta Empire- political structure, literary and scientific developments; post-Gupta polities- Pallavas, Western Chalukyas and Vardhanas

**Unit V:** Religious and Cultural Developments: Buddhism and Jainism; Brahmanical tradition with special reference to Dharma and Varnashrama; Tamil literature; development of art and architecture

##### Essential Readings:

1. Thapar, Romila, *Early India: From the Origins to AD 1300*, University of California Press, 2004
2. Singh, Upinder, 2009, *A History of Ancient and Early Medieval India, From the Stone Age to the 12th Century*, Delhi: Pearson Longman
3. Raychaudhuri, Hemchandra, *Political History of Ancient India*, Oxford University Press
4. Kosambi, D.D., *An Introduction to the Study of Indian History (Bombay)*, 1956
5. Sharma, R.S., *Aspects of Political Ideas and Institutions in Ancient India*, Mac Millan, New Delhi, 1983
6. Sharma, R.S., *Material Culture and Social Formations in Ancient India*, Mac Millan, New Delhi, rpt, 1990
7. D. D. Kosambi, *The Culture and Civilization of Ancient India in Historical Perspective*, 2nd Reprint, Delhi, 1975
8. D. N. Jha, *Studies in Early Indian Economic History*, Delhi, 1980
9. Romila Thapar, *The Penguin History of Early India*, Penguin Books, New Delhi, 2002
10. R.S Sharma, *India's Ancient Past*, Oxford University Press, reprint 2016

## SEMESTER II

### MHST 2.5: History of Medieval India

#### Objective

This course is intended to familiarize the students with the main trends and developments of medieval India from the Sultanate till the reign of the Mughals.

**Unit I:** Turkish invasion of India under Shihabuddin Ghuri and Qutub-ud-din Aibak, political consolidation under the Slave dynasty, Khiljis, Tughlaqs and the Lodis; Administration

**Unit II:** Society and economy under the Sultanate: Iqta and the revenue free grants; agricultural production, market regulations; internal and external trade

**Unit III:** The beginning and consolidation-Babur and Akbar; continuation of political heydays-Jahangir, Shah Jahan and Aurangzeb; decline; rise of the Marathas

**Unit IV:** Mughal Administration; Mansabdari; Jagirdari; zabti system; trade and commerce; industrial activities in the Mughal period

**Unit V:** Bhakti and Sufi Movements; Sikhism: Guru Nanak as a non-conformist, emergence of the Nanak Panth, Sikh Gurus, militarism, emergence of Khalsa, significance and impacts; Indo-Islamic art and architecture.

#### Essential Readings:

1. Mukhia, Harbans, "The Mughals of India", Blackwell Publishing Ltd., UK, 2004
2. Mehta, J.L., "Advanced Study in the History of Medieval India, Vol.2", 1981.
3. Tripathi, R.P. "Rise and Fall of Mughal Empire", Central Book Depot, Allahabad, 1963
4. Chandra, Satish, "Essays on Medieval Indian History", OUP, 2003
5. Habib, Irfan, "The Agrarian System of Mughal India, 1556-1707", OUP, 1963
6. Ali, Athar.M. "Mughal India, Studies in Polity, Ideas, Society and Culture", OUP, 2006.
7. Satish Chandra. History of Medieval India, Vol. 1 and 2,
8. Habib, M., Nizami, K.A., "Comprehensive History of India: Delhi Sultanate, A.D. 1206-1526 Vol V", Peoples Publishing House, 1970.
9. Rashid, A. "Society and Culture in Medieval India" Calcutta, 1969
10. Macleod, W.H. "Guru Nanak and the Sikh Religion", Oxford, 1968
11. Habib, Irfan, "Economic History of India, Vol, I" Delhi, 1971

## SEMESTER III

### MHST 3.5: Indian National Movement (1885-1947)

#### Objective

The paper aims to make the students understand the events relating to India's Freedom struggle

**Unit I:** Foundation of the Indian National Congress: Formation, objectives and methods; Early phase; achievements and failures; British reaction to the Congress movement; Partition of Bengal and Swadeshi movement

**Unit 2:** Rise of Extremism: Bal Gangadhar Tilak, Bipin Chandra Pal, Lala Rajpat Rai and Aurobindo Ghosh; Difference between Moderates and Extremists; Surat Split; Militant Revolutionary Activities in India and Abroad.

**Unit 3:** Mahatma Gandhi and his Movements: Rise of Gandhi; The Non-Co-operation Movement; The Civil Disobedience Movement; Quit India Movement

**Unit 4:** Birth of Muslim League: Activities and growth of Muslim League; Demand for Pakistan. Rise and growth of Leftist Movement; Growth and activities of the Communist and Socialist; Subhash Chandra Bose and INA.

**Unit 5:** Freedom and Partition: Wavell Plan; Cabinet Mission Plan; Mountbatten Plan; Partition and Independence.

### Essential Readings

1. Bipan Chandra, *India's Struggle for Independence*, Vikas Publisher, New Delhi, 1998
2. B. R. Nanda, *Essays in Indian Nationalism*, New Delhi, 1978
3. Anil Seal, *The Emergence of Indian Nationalism*, London, Cambridge University Press, 1971
4. R.P. Dutt, *India Today*, Calcutta, 1999
5. Judith Brown, *Gandhi's Rise to Power*, OUP, London, 1997
6. N. S. Bose, *Quest for Status and Freedom*, Calcutta, 1986
7. M. K. Gandhi, *The Hind Swaraj*, Various editions: Pareed., and T. Surhud, S. Sharma ed. Etc
8. R N Tagore, *Nationalism, With an Introduction* by E. P. Thompson, Calcutta, Rupa, 1992
9. J R McLane, *Indian Nationalism and the Early Congress*, Princeton, N.J: Princeton University Press, 1977
10. Sekhar Bandyopadhyay, *From Plassey to Partition: A History of Modern India*, Orient Longman, New Delhi, 2004
11. AR Desai, *Social Background of Indian Nationalism*, Popular Prakashan, Reprint, Mumbai, 2008

## SEMESTER IV

### MHST 4.5: Contemporary World (1945-2000)

#### Objective

The paper aims to acquaint the students with the Post-war scenario and to enable them to understand contemporary world from historical perspective.

**Unit I:** Cold war and its effects: Cold war and bilateralism in world politics; Berlin Crisis; Korean war; Cuban crisis. Pacts and treaties; NATO, CENTO, SEATO, ANZUS, Warsaw Pact

**Unit II:** Emergence of Third World: Non-aligned Movement-Concept, Features, Results. UN- Origin, Structure, Allied bodies, works.

**Unit III:** West Asia in World Politics: Oil politics; Arab-Israel conflicts; Palestinian issue; Seuz Crisis; Kuwait-Iraq war and its impact.

**Unit IV:** Age of Progress: Industry, Agriculture, Science, Technology, Communication, Information, Civil rights movements, Apartheid, Feminism.

**Unit V:** Disintegration of Socialist bloc: End of Cold war; disintegration of USSR and its consequences; Globalization and its impact; Concept of Liberalization, Privatization, Globalization (LPG); European Union; BRIC

## Essential Readings

1. Buzan Barry and Richard Little, *International Systems in World History*, OUP, 2000.
2. Cornwall R.D., *World History in 20<sup>th</sup> Century*, Longman, London, 1976.
3. Eric Hobsbawn, *The History of the World (1914-1991)*, 1996
4. Keit Robbins, *The World since 1945*, 1998
5. Knapp Wilfrid, *A History of War and Peace*, Oxford, 1976.
6. Langsam W.C., *The World Since 1919*.
7. Calvocoresi, Peter, *World Politics since 1945*
8. Stephen Hemsly , *Oil in the Middle East*
9. Wint, Guy, and Peter Calvocoresi , *The Middle East in Crisis*
10. Norman Lowe, *Mastering Modern World History*, Palgrave Macmillan, reprint 2016