

ST. JOSEPH'S COLLEGE

JAKHAMA

(Autonomous status granted by UGC notification No.F.22-1/2017(AC) Dtd.11th Oct.2018) P.B. No. 39, Kohima, Nagaland – 797 001 0370-2231009 (O), 2233022 (Principal), 9436437544 (M), Fax: 2231022 www.stjosephjakhama.ac.in Email: stjosephc@gmail.com NAAC Grade A (CGPA: 3.12)

Sample for Course Objectives (COs) and Course Specific Objectives (CSOs)

NAME OF THE PAPER (CODE)	: ENVIRONMENTAL STUDIES (MDC1)
Number of Credit	:4
Number of Hours of Lecture	: 45

COURSE OBJECTIVES (COs)

The follow	ing are the Course Objectives (COs) for the paper Environmental Studies:
CO 1:	To make the students understand the concept of environmental studies and ecosystems.
CO 2:	To enable the students in understanding the significance of natural resources, their role in sustaining life and issues related to various resources.
CO 3:	To create an understanding among the students on biodiversity and conservation, and associated environmental services.
CO 4:	To acquaint the students about various environmental pollution, policies and practices.
CO 5:	To make the students aware about various interactions between human communities and the environment.

COURSE SPECIFIC OBJECTIVES (CSOs)

Unit & Title	Unit Contents	Course Specific	Lecture	Marks	LOs
		Objective (CSOs)	Hours		
UNIT 1	Definition, Scope	CSO 1.1: to state the	8	15	Not to be
Introduction	and importance of	concept of environmental			filled-in
to	environmental	studies through definition,			
Environmental	studies. Multi-	scope, and importance of			
Studies and	disciplinary nature of	the subject. (K)			
ecosystems	environmental	CSO 1.2: to discuss the			
	studies.	multidisciplinary nature			
	• Components of the	of environmental studies			
	environment: the	and how different			
	atmosphere,	disciplines can contribute			
	hydrosphere,	to the understanding of			
	lithosphere,	the environment. (U)			
	biosphere.	CSO 1.3: to explain the			
	 Concept of 	fundamental components			
	sustainability and	that constitute our			
	sustainable	environment and the			
	development.	interactions among			
	 Definition and 	different components. (U)			
	concept of ecosystem,	CSO 1.4: to understand			
	Structure (biotic and	sustainable practices and			
	abiotic) and Function	the importance of			
	of an ecosystem:	balancing human needs			
	Energy flow	with environmental			
	(ecological pyramid),	preservation. (U)			
	food chain, food webs	CSO 1.5: to describe the			
	and ecological	intricacies of ecosystems			
	succession.	and its structure including			

		both biotic and abiotic components. (K) CSO 1.6: to discuss the concepts of energy flow (ecological pyramid), food chains, food webs, and ecological succession, and how they affect the stability and diversity of ecosystems. (U)			
UNIT 2	Natural resources:	CSO 2.1: to define	9	20	Not to be
Natural	Renewable and Non-	renewable and non-			filled-in
Resources	Renewable	renewable resources. (K)			
	Resources.	CSO 2.2: to explore the			
	• Land degradation,	causes and consequences			
	soil erosion and	of land degradation, soil			
	desertification.	erosion and			
	• Deforestation:	desertification. (A)			
	Causes and its	CSO 2.3: to elaborate the			
	Impacts due to	consequences of			
	mining dam building	deforestation (II)			
	on environment.	CSO 2.4: to discuss the			
	forests, biodiversity	impacts due to mining,			
	and tribal populations.	dam building on			
	• Water resources:	environment, forests,			
	Uses of water and	biodiversity and tribal			
	over-exploitation of	populations. (U)			
	surface and ground	CSO 2.5: to explore the			
	water. Conflicts over	importance and			
	water sharing	challenges related to			
	(international & inter-	water resources such as			
	• Energy resources:	over-exploitation of			
	• Ellergy resources.	conflicts over water			
	energy sources	sharing (A)			
	energy sources.	CSO 2.6: to identify			
		alternate energy sources.			
		(A)			
UNIT 3	• Definition, Levels of	CSO 3.1: to define	9	24	Not to be
Biodiversity	biological diversity:	biodiversity. (K)			filled-in
and	Genetic, species and	CSO 3.2: to characterise			
Conservation	ecosystem diversity;	genetic, species and			
	Bio geographic zones	ecosystem diversity. (U)			
	of India, Biodiversity	CSO 3.3: to distinguish			
	• India as a maga	India (A)			
	biodiversity nation	CSO 3 4 • to list			
	Endangered and	biodiversity hotspots (K)			
	endemic species of	CSO 3.5: to illustrate			
	India, IUCN Red	India as a megadiversity			
	list and its categories.	nation. (A)			
	• Threats to	CSO 3.6: to discuss			
	biodiversity: Habitat	endangered and endemic			
	loss and	species of India. (U)			
	fragmentation,				

UNIT 4• Environmental Politics and incauses. Conservation of biodiversity: ln-siu and Ex-situ conservation of biodiversity: ln-siu and Ex-situ conservation of biodiversity: ln-siu and Ex-situ conservation of biodiversity: ln-siu and Ex-situ conservation of biodiversity exystome species.red list and its categories. (K) CSO 3.8: to determine threats to biodiversity social, economic, social, ethical and aesthetic value, CEPA, option value.red list and its categories. (CSO 3.10: to explain in- situ and ex-situ conservation of biodiversity. (K) CSO 3.11: to define keystone species. (K) CSO 3.12: to identify ecosystem and biodiversity. (L) cosostal, ethical and aesthetic value, Communication, Education and Public Awareness (CEPA), option value. (A)1126Not to be filled-inUNIT 4 Polities and Practices• Environmental pollution, Solid waste and its management. (C) CSO 4.1: to describe environmental pollution, add rain and its management. (U) CSO 4.3: to characterise solid wastes and its management. (U) CSO 4.4: to explain coment and control measures of air, water, solid wastes and its management. (U) CSO 4.4: to explain conservation A control of Pollution) Act, 1981, Withelfie Protection Act (1980); Ari (Prevention & Control of Pollution) Act, 1981, Withelfie Protection Act (1972), Forest Conservation A convention Act, 1980, water (Sole and Convention, Montreal protocol, Kyoto protocol, and Convention, Montreal protocol, Kyoto protocol, and Convention on Biological11<		poaching of wildlife,	CSO 3.7: to define IUCN			
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Invasions. Conservation of biodiversity: In-situ and Ex-situ conservation of biodiversity, keystone species.CSO 33: to determine threats to biodiversity such as habitat loss and fragmentation, poaching of wildlife man-wildlife conflicts, biological invasions. (A)• Ecological, economic, social, ethical and aesthetic value, CEPA, option value.CSO 33: to define conservation of biodiversity. (K) CSO 31: to define conservation of biodiversity. (U) CSO 31: to define keystone species. (K) CSO 31: to describe environmental pollution. (K) CSO 31: to describe environment protection Act (1986); Air (Prevention A control of Polution) Act, 1974, Wildlife Polution Act, 1972, Forest Conservation Act, 1980.CSO 4.3: to explain convention, management. (U) CSO 4.3: to explain climate change, global warring, corne layer d		conflicts, biological	(K)			
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on Biological	UNIT 4 Environmental Pollution, Policies and Practices	 Environmental pollution: causes, effects and its control measures of Air, Water, Soil and Noise pollution, Solid waste and its management. Climate change, global warming, ozone layer depletion, acid rain and its impacts. Environment Laws: Environment Protection Act (1986); Air (Prevention & Control of Pollution) Act, 1981, Water (Prevention and control of Pollution) Act, 1974, Wildlife Protection Act (1972), Forest Conservation 	CSO 4.1: to describe environmental pollution. (K) CSO 4.2: to investigate causes, effects and control measures of air, water, soil, and noise pollution. (A) CSO 4.3: to characterise solid wastes and its management. (U) CSO 4.4: to explain climate change, global warming, ozone layer depletion, acid rain and its impact. (U) CSO 4.5: to describe environmental law. (K) CSO 4.6: to write about International Conventions on Environment: CITES, UNFCCC, Ramsar convention and Vienna convention, Montreal protocol. Kyoto	11	26	Not to be filled-in
	UNIT 4 Environmental Pollution, Policies and Practices	 Environmental pollution: causes, effects and its control measures of Air, Water, Soil and Noise pollution, Solid waste and its management. Climate change, global warming, ozone layer depletion, acid rain and its impacts. Environment Laws: Environment Protection Act (1986); Air (Prevention & Control of Pollution) Act, 1981, Water (Prevention and control of Pollution) Act, 1974, Wildlife Protection Act (1972), Forest Conservation Act, 1980 	CSO 4.1: to describe environmental pollution. (K) CSO 4.2: to investigate causes, effects and control measures of air, water, soil, and noise pollution. (A) CSO 4.3: to characterise solid wastes and its management. (U) CSO 4.4: to explain climate change, global warming, ozone layer depletion, acid rain and its impact. (U) CSO 4.5: to describe environmental law. (K) CSO 4.6: to write about International Conventions on Environment: CITES, UNFCCC, Ramsar convention and Vienna convention, Montreal protocol, Kyoto protocol and Convention	11	26	Not to be filled-in

	• International Conventions on Environment: CITES, UNFCCC, Ramsar convention and Vienna convention, Montreal protocol, Kyoto protocol, and Convention on	Diversity (CBD). (K)			
	Biological Diversity (CBD)				
UNIT 5 Human Communities and the Environment	 Human population growth: Impacts on environment and human health. Disaster management: floods, drought, earthquake, cyclones and landslides. Environmental movements: Chipko, Silent valley, Bishnois of Rajasthan, Narmada Bachao andolan. Environmental communication and public awareness. 	CSO 5.1: to explain human population growth. (U) CSO 5.2: to analyse its impact on environment and human health. (A) CSO 5.3: to define disaster management. (K) CSO 5.4: to explore floods, drought, earthquake, cyclones and landslides and its mitigation. (A) CSO 5.5: to discuss environmental movements. (U) CSO 5.6: to develop environmental communication and public awareness. (A)	8	15	Not to be filled-in

Field work\Outreach\Dissertation related activities (Internal Assessment-20 marks)

• Field visit to nearby polluted sites for assessing the impacts on environment and the lives and economy of the local people – solid waste study site, water pollution, air pollution, soil pollution and developmental project sites.

• Study of structure and function of ecosystems – field visit to a forest, river/streams, hill/mountains and grassland.

• Study and documentation of common plants, insects and animals species.

• Visit to a nearby village and educational institutions for environmental education and public awareness; interact with the local people, the problems faced and ways to solve the environmental issues.

Suggested readings

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- 2. Bharucha Erach, The Biodiversity of India, Mapin Publishing Pvt. Ltd., Ahmadabad 380 013, India, Email: mapin@icenet.net (R)
- 3. Bharucha Erach, Textbook of Environmental studies for Undergraduate Courses (3rd edition), Universities press (India) private limited, Himayatnagar, Hyderabad 500 029.

- 4. Cunningham, W.P. Cooper, T.H. Gorhani, E & Hepworth, M.T. (2001). Environmental Encyclopedia, Jaico Publ. House, Mumbai.
- 5. Heywood, V.H & Waston, R.T. (1995). Global Biodiversity Assessment. Cambridge Univ. Press 1140p.
- Jadhav, H & Bhosale, V.M. (1995). Environmental Protection and Laws. Himalaya Pub. House, Delhi 284 p.
- 7. Miller T.G. Jr. Environmental Science, Wadsworth Publishing Co. (TB)
- 8. Trivedi R.K., Handbook of Environmental Laws, Rules Guidelines, Compliances and Standards, Vol I and II, Enviro Media (R)
- 9. Trivedi R. K. and P.K. Goel, Introduction to air pollution, Techno-Science Publication (TB)
- Wanger K.D., (1998). Environmental Management. W.B. Saunders Co. Philadelphia, USA 499p (M) Magazi
- 11. Climate Change: Science and Politics. (2021). Centre Science and Environment, New Delhi.
- 12. Groom, Martha J., Gary K. Meffe, and Carl Ronald Carroll. (2006). Principles of Conservation Biology. Sunderland: Sinauer Associates.
- 13. Mc Cully, P. (1996). Rivers no more: the environmental effects of dams (pp.29-64). Zed Books.
- 14. Nandini, N., Sunitha N., & Sucharita Tandon. (2019). A text book on Environmental Studies (AECC). Sapna Book House, Bengaluru.
- 15. Odum, E.P., H.T. & Andrews, J. (1971). Fundamentals of Ecology. Philadelphia: Saunders.
- 16. Pepper, I.L, Gerba, C.P. & Brusseau, M.L. (2011). Environmental and Pollution Science. Academic Press.
- 17. Rajit Sengupta and Kiran Pandey. (2021). State of India's Environment 2023: In Figures. Centre Science and Environment.
- Raven, P.H., Hassenzahl, D.M. & Berg, L.R. (2012). Environment. 8th Edition. John Wiley & Sons.
- 19. Rosencranz, A., Divan, S., & Noble, M. L. (2001). Environmental law and policy in India.
- 20. Sengupta, R. (2003). Ecology and economics: An approach to sustainable development. OUP.
- 21. Singh, J.S., Singh, S.P. and Gupta, S.R. (2014). Ecology, Environmental Science and
- 22. Conservation. S. Chand Publishing, New Delhi.