ST. JOSEPH'S COLLEGE
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NAAC Grade A (CGPA: 3.12)

NAME OF THE PAPER (CODE) : **PROGRAMMING USING PYTHON (MDC-2)**
Number of Credit : **04**
Number of Hours of Lecture : **60**

COURSE OBJECTIVES (COs)

The following are the Course Objectives (COs) for the paper **Numerical Methods**:

CO 1:	To understand the basics of computer system.
CO 2:	To develop, document, and debug modular python programs to solve computational problems.
CO 3:	To select a suitable programming construct and data structure for a situation.
CO 4:	To use strings and lists in an applications.
CO 5:	To use tuples and dictionaries in an applications.

COURSE SPECIFIC OBJECTIVES (CSOs)

Unit & Title	Unit Contents	Course Specific Objective (CSOs)	Lecture Hours	Marks	LOs
UNIT 1 Computer System	Introduction to Computer System, Evolution of Computer, Computer Memory, Data Transfer between Memory and CPU, Microprocessors, Data and Information, Software, Operating System	**CSO 1.1:** To define computer System .(K) **CSO 1.2:**To discuss evolution of computer. (U) **CSO 1.3:**To explain functional components of computer system.. (U) **CSO 1.4:** To discuss memory, data transfer, microprocessors. (U) **CSO 1.5:** To differentiate between data and information..(U) **CSO 1.6:** To discus software and Operating System (U)	12	20	Not to be filled-in
UNIT 2 Getting Started with Python	Introduction to Programming using Python, Python, Keywords, Identifiers, Variables, Comments, everything is an Object, Data types, Operators, Expressions, Statement, Input and Output, Type Conversion, Debugging	**CSO 2.1:** To explain programming and python environment. (U) **CSO 2.2:** To discuss keywords, identifiers, variables, comments and objects.(U) **CSO 2.3:** To discuss various data types and Operators. (U) **CSO 2.4:** To explain expressions and statements.(U) **CSO 2.5:** To explain	12	20	Not to be filled-in

		Input and Output statements .(U) **CSO 2.6:** To discuss type conversion and debugging .(U) **CSO 2.7:** To demonstrate a program execution using Python.(A)			
UNIT 3 **Flow of Control and Functions**	Introduction, Selection, Indentation, Repetition, Break and Continue Statement, Nested Loops Introduction to Functions, User Defined Functions, Scope of a Variable, Python Standard Library	**CSO 3.1:**To discuss the need of Flow of Control .(U) **CSO 3.2:** To List the various control flow statements.(K) **CSO 3.3:** To discuss selection statement.(U) **CSO 3.4:**To apply selection statement in a program.(A) **CSO 3.5:** To explain importance of indentation.(U) **CSO 3.6:**To discuss Repetition statements.(U) **CSO 3.7:**To apply repetition statement in a program.(A) **CSO 3.8:**To discuss break and continue statements.(U) **CSO 3.9:** To explain nested loop.(U) **CSO 3.10:**To explain Functions.(U) **CSO 3.11:**To explain scope of variable.(U) **CSO 12:** To explain standard library.(U) **CSO 3.13:**To apply functions, variables and standard library in a program.(A)	12	20	Not to be filled-in
UNIT 4 **Strings and List**	Introduction to Strings, String Operations, Traversing a String, String Methods and Build-in Functions, Handling Strings Introduction to List, List Operations, Traversing a List, List methods and Build-in Functions, Nested Lists, Copying lists, List as Arguments to function, List Manipulation	**CSO 4.1:** To define string.(K) **CSO 4.2**: To explain string operation and traversing. (U) **CSO 4.3:**To explain string methods and build-in functions.(U) **CSO 4.4**To apply strings in a program.(A) **CSO 4.5:**To define list .(K) **CSO 4.6:**To discuss list operations and traversing	12	20	Not to be filled-in

		.(U) **CSO 4.7:**To discuss list methods and built-in functions. (U) **CSO 4.8:**To discuss nested list, list as arguments and list manipulation. (U) **CSO 4.9:** To apply list in a program.(A)			
UNIT 5 **Tuples and Dictionaries**	Introduction to Tuples, Tuple Operations, Tuple Methods and Build-in Functions, Tuple assignment, Nested Tuples, Tuple Handling Introduction to Dictionaries, Dictionaries are Mutable, Dictionary Operations, Traversing a Dictionary, Dictionary methods and Build-in functions, Manipulating Dictionaries	**CSO 5.1:** To explain tuples. (U) **CSO 5.2:** To explain tuple operations. (U) **CSO 5.3:** To explain tuple methods and build-in functions.(U) **CSO 5.4:** To explain nested tuples. (U) **CSO 5.5:** To apply tuples in a program. (A) **CSO 5.6:** To explain dictionaries. (U) **CSO 5.7:**To discuss Dictionaries as mutable.(U) **CSO 5.8**: To discuss dictionary operations, traversing, methods and build-in functions. (U) **CSO 5.9:** To apply dictionary in a program .(A)	12	20	Not to be filled-in