MCA (Master of Computer Applications)
MCA (Master of Computer Applications) Semester I

Course Code	PS01CMCA51	Title of the Course	PYTHON PROGRAMMING
Total Credits of the Course	4	Hours per Week	4

Course Objectives:	1. To learn the fundamentals of the Python programming language. 2. To study development of procedural as well as object-oriented Python programs. 3. To learn GUI program development using Python. 4. To understand how to access files and databases from Python.

Course Content		
Unit	Description	Weightage* (%)
1.	**Introduction to Python** - Brief history, key characteristics, - Advantages & Python Application Areas - Syntax overview, comments, naming conventions - Primitive data types, data type constructors - Operators - Console input and output - Control structures	25
2.	**Aggregate Data Types** - Sequence types: lists, tuple, range - Common operations on sequences - Operations on lists - Using tuples and ranges - Text sequence type: str - Operations on strings	25
3.	**Composite Data Types, Functions and Exception Handling** - Mapping type : dict - Set type: set - Functions - Exception handling	25

4.	**Additional Features of Python** - Object-oriented programming in Python - File handling in Python - Modules and packages - Introduction to GUI applications and database connectivity	25

Teaching-Learning Methodology	Blended learning approach incorporating traditional classroom teaching as well as online / ICT-based teaching practices

Evaluation Pattern		
Sr. No.	Details of the Evaluation	Weightage
1.	Internal Written / Practical Examination (As per CBCS R.6.8.3)	15%
2.	Internal Continuous Assessment in the form of Practical, Viva-voce, Quizzes, Seminars, Assignments, Attendance (As per CBCS R.6.8.3)	15%
3.	University Examination	70%

Course Outcomes: Having completed this course, the learner will be able to	
1.	develop computer programs using the Python programming language.
2.	manipulate different Python data types.
3.	develop object-oriented programs using Python.
4.	understand the Python package system.
5.	create basic GUI programs as well as Python programs with file handling and database access.

Suggested References:	
Sr. No.	References
1.	Rao, R. Nageswara : Core Python Programming, 2nd Edition, Dreamtech Press, 2018.
2.	Lutz, Mark : Learning Python, 5thEdition, O'Reilly, 2013.

3.	Summerfield, Mark : Programming in Python 3: A Complete Introduction to the Python Language, 2nd Edition, Pearson Education, 2018.
4.	Guttag, John V. : Introduction to Computation and Programming Using Python, 2nd Edition, The MIT Press, 2016.
5.	Sneeringer, Luke : Professional Python, Wiley, 2015.
6.	Sedgewick, Robert, Wayne, Kevin, Dondero, Robert : Introduction to Programming in Python, Addison-Wesley Professional, 2015.

On-line resources to be used if available as reference material	
1.	Python documentation.

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