OLMCA502	Python Programming	L	T	P	C
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Pre-requisite	**NIL**	**Syllabus version**			
		1.0			

Course Objectives:

1. To Introduce the basics of Python programming.
2. Ability to write python program with conditions and looping.
3. Ability to manipulate various data structures with python.

Course Outcomes:

1. Differentiate the programming Language constructs appropriately to solve any problem.
   Solve various engineering problems using different data structures.
2. Able to modulate the given problem using structural approach of programming.
3. Efficiently handle data using flat files to process and store data for the given problem.

Module:1	**Introduction to Python basics**

Data Types, Python Interactive and script modes, Python programming with IDE and online compilers, Identifiers and literals, Keywords, Escape Sequences, Basic I/O with python. Developing “Hello India” with Python.

Module:2	**Python Programming Constructs**

Operators and Expressions, I/O formatting, Type Casting and conversions, Conditional statements, Iterative Statements, Python packages, Solving problems with conditions and Iterations examples.

Module:3	**String handling & Pattern Matching**

Mutable and Immutable concept in Python, Strings, Built in functions for String handling, Pattern matching, Pattern matching with Regular Expressions.

Module:4	**Lists and Tuples**

Slicing and Indexing, Lists, tuples, Difference between Tuples and lists.

Module:5	**Dictionaries and Sets**

Working with python Dictionaries, Sets, Case examples, Real world applications.

Module:6	**User Defined Functions**

User Defined Functions, Calling functions with arguments. Keyword arguments, positional arguments,
Default Arguments, Recursive Functions.

Module:7	**Modules and Packages**

Built-in Modules, User-Defined Modules, Overview of NumPy and Pandas.

	Total Lecture hours:	**120 hours**

Text Book(s)

1. Introducing Python, 2nd Edition by Bill Lubanovic, O'Reilly Media, 2019.

Reference Books

1. John V. Guttag., 2016. Introduction to computation and programming using python: with applications to understanding data. PHI Publisher.
2. Charles Severance.2016.Python for everybody: exploring data in Python 3, Charles Severance.

Mode of Evaluation: Quiz / Assignment / Mid-Term, FAT

Recommended by Board of Studies	15.11.2021		
Approved by Academic Council	No. 64	Date	16-12-2021