SYLLABUS

MALLA REDDY COLLEGE OF ENGINEERING AND TECHNOLOGY

III Year B. Tech CSE -II SEM	**L**	**T/P/D**	**C**
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OPEN ELECTIVE III
(R17A0554) PYTHON PROGRAMMING

OBJECTIVES:

- To read and write simple Python programs.
- To develop Python programs with conditionals and loops.
- To define Python functions and call them.
- To use Python data structures –- lists, tuples, dictionaries.
- To do input/output with files in Python.

UNIT I
INTRODUCTION DATA, EXPRESSIONS, STATEMENTS
Introduction to Python and installation, data types: Int, float, Boolean, string, and list; variables, expressions, statements, precedence of operators, comments; modules, functions--- function and its use, flow of execution, parameters and arguments.

UNIT II
CONTROL FLOW, LOOPS
Conditionals: Boolean values and operators, conditional (if), alternative (if-else), chained conditional (if-elif-else); Iteration: while, for, break, continue.

UNIT III
FUNCTIONS, ARRAYS
Fruitful functions: return values, parameters, local and global scope, function composition, recursion; Strings: string slices, immutability, string functions and methods, string module; Python arrays, Access the Elements of an Array, array methods.

UNIT IV
LISTS, TUPLES, DICTIONARIES
Lists: list operations, list slices, list methods, list loop, mutability, aliasing, cloning lists, list parameters, list comprehension; Tuples: tuple assignment, tuple as return value, tuple comprehension; Dictionaries: operations and methods, comprehension;

UNIT V
FILES, EXCEPTIONS, MODULES, PACKAGES
Files and exception: text files, reading and writing files, command line arguments, errors and exceptions, handling exceptions, modules (datetime, time, OS , calendar, math module), Explore packages.

OUTCOMES: Upon completion of the course, students will be able to

- Read, write, execute by hand simple Python programs.
- Structure simple Python programs for solving problems.
- Decompose a Python program into functions.
- Represent compound data using Python lists, tuples, dictionaries.
- Read and write data from/to files in Python Programs

TEXT BOOKS

1.Allen B. Downey, ``Think Python: How to Think Like a Computer Scientist‘‘, 2nd edition, Updated for Python 3, Shroff/O‘Reilly Publishers, 2016.
2.R. Nageswara Rao, “Core Python Programming”, dreamtech
3. Python Programming: A Modern Approach, Vamsi Kurama, Pearson

REFERENCE BOOKS:

1. Core Python Programming, W.Chun, Pearson.
2. Introduction to Python, Kenneth A. Lambert, Cengage
3. Learning Python, Mark Lutz, Orielly