PRASAD V. POTLURI SIDDHARTHA INSTITUTE OF TECHNOLOGY

(Autonomous)

KANURU, VIJAYAWADA-520007

I B.Tech – II Sem CSE (DATA SCIENCE)

PYTHON PROGRAMMING

Course Code	20ES1205	Year	I	Semester	II
Course Category	Engineering Sciences	Branch	CSE (Data Science)	Course Type	Theory
Credits	3	L-T-P	3-0-0	Prerequisites	-
Continuous Internal Evaluation :	30	Semester End Evaluation	70	Total Marks:	100

Course Outcomes		
Upon successful completion of the course, the student will be able to		
CO1	Understand the Features and Constructs of Python Programming Language for solving problems.	L2
CO2	Apply the knowledge of Python constructs for developing programs.	L3
CO3	Apply suitable control constructs, functions, and strings for solving problems.	L3
CO4	Analyze the given problem and use suitable structure (Lists, Tuple and Dictionaries) for developing the solutions.	L4

Contribution of Course Outcomes towards achievement of Program Outcomes & Strength of correlations (3:High, 2: Medium, 1:Low)													
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	2													
CO2	3													
CO3	3													
CO4		2										1		

	Syllabus	
Unit No.	**Contents**	**Mapped CO's**
I	**Introduction:** History, Features, Future of Python, Writing and Executing, Literal Constants, Variables and Identifiers, Data Types, Input Operation, Comments, Reserved Words, Indentation, Operators, Expressions, Other data types, Operations on strings, Type Conversion.	**CO1, CO2**
II	**Decision Control Statements:** Introduction to Decision Control Statements, Selection/Conditional Branching Statements, Basic Loop Structures/Iterative Statements, Nested Loops, Break Statement, Continue Statement, pass statement, else statement used with Loops.	**CO1, CO2**
III	**Functions and Modules:** Introduction, Function Definition, Function Call, Variable Scope and Lifetime, return statement, More on Defining Functions, Lambda Functions or Anonymous Functions, Documentation Strings, Recursive Functions, Modules, Packages in Python, Standard Library Modules, Function Redefinition**.**	**CO1, CO3**
IV	**Python String:** Introduction**,** Concatenating, Appending and Multiplying Strings, Strings are Immutable, String Formatting Operator, Built-in String Methods and Functions, Slice Operation, ord() and chr() Functions, in and not in operators, Comparing Strings, Iterating String, The String Module, Regular Expressions, Metacharacters in Regular Expression.	**CO1, CO3**
V	**Lists:** Access values, Updating Values, Nested Lists, Cloning Lists, Basic List Operations, List Methods. **Tuple:** Creating, Utility, Accessing Values, Updating, Deleting Elements, Basic Tuple Operations, Tuple Assignment, Tuples of Returning Multiple Values, Nested Tuples, List Comprehension and Tuples, Variable-length Argument Tuples, Advantages of Tuple Over List. **Dictionaries:** Creating, Accessing Values, Adding and Modifying an Item in a Dictionary, Modifying an Entry, Deleting Items, Sorting Items, Looping Over a Dictionary, Nested Dictionaries, Built-in Dictionary Functions and Methods, Difference between a List and a Dictionary, List vs Tuple vs Dictionary.	**CO1, CO4**

Learning Resources:
Text Books:

1. Python Programming: Using Problem Solving Approach, Reema Thareja, 2017, Oxford UniversityPress.
References:
1. Core Python Programming, R. Nageswara Rao, 2018, Dreamtech press. 2. Programming with python, T R Padmanabhan, 2017, Springer.
e- Resources & other digital material:
1. https://nptel.ac.in/courses/106106182 2. https://www.w3schools.com/python/default.asp