# Introduction to Python Programming 19ACS28
## (EEE)

B. Tech – IV Semester (R19)

L-T-P-C
3-0-0-3

## OBJECTIVES:

- To introduce object oriented programming using an easy-to-use language.
- To use iterators and generators.
- To test objects and handle changing requirements.
- To be exposed to programming over the web.

## UNIT I - INTRODUCTION, DATA TYPES AND EXPRESSIONS

Introduction: Computer science, Computer algorithms, Computer software, The Python programming language, First program in Python.

Data Types and Expressions: Literals, Variables and Identifiers, Operators, Expressions and Data types.

## UNIT II - CONTROL STRUCTURES, LISTS

Control Structures: Control structures, Boolean expressions, Selection control and Iterative control.

Lists: List structures, Lists in Python, Iterations over lists, Assigning and copying lists, List comprehensions.

## UNIT III – DICTIONARIES, TUPLES AND SETS

Dictionaries, Tuples and Sets: Dictionary types in Python, Implementation of Dictionary, Tuples, Set data type - the Set data type in Python, Implementation of sets.

## UNIT IV - DESIGN WITH FUNCTIONS, RECURSION, STRINGS AND TEXT FILES

Program routines, Functions: calling value returning functions, calling non value returning functions, parameter passing, variable scope, Recursion-Recursive functions, Recursive problem solving, Iteration Vs Recursion, Text files: Using text files, String processing, Exception handling.

## UNIT V - OBJECTS AND THEIR USE

Objects and Their Use: Software objects: Object, Object References, Turtle graphics-Creating a turtle graphics window, The default turtle, Fundamental turtle attributes and behavior, Additional turtle Attributes, creating multiple turtles.

## TEXT BOOKS:

1. Charles Dierbach, Introduction to Computer Science using Python: A Computational Problem-Solving Focus, Wiley India Edition, 2016.
2. Mark Lutz, "Programming Python," O'Reilly Publications, Fourth Edition, 2011.

## REFERENCE BOOK:

1. Kenneth Lambert and B.L. Juneja, *Fundamentals of Python,* Cengage Learning, Third Edition, 2012.