

# VASAVI COLLEGE OF ENGINEERING(Autonomous)

ACCREDITED BY NAAC WITH 'A++' GRADE  
IBRAHIMBAGH, HYDERABAD – 500 031

## Department of Computer Science & Engineering

### PROGRAMMING ESSENTIALS IN PYTHON

Stream - Artificial Intelligence & Machine Learning

#### (OPEN ELECTIVE-I)

(Common for CIVIL, ECE, EEE & MECH)

### SYLLABUS FOR B.E. III-SEMESTER

L:T:P (Hrs./week): 2:0:0	SEE Marks : 60	Course Code : <b>U230E320CS</b>
Credits : 2	CIE Marks : 40	Duration of SEE : 3 Hours

<b>COURSE OBJECTIVES</b>	<b>COURSE OUTCOMES</b> <i>On completion of the course, students will be able to</i>
1 Acquire problem solving skills	1 Design python programs using arithmetic expressions and decision making statements
2 Learn programming and solve problems using Python language	2 Design modular python programs using functions
	3 Develop programs using strings and list
	4 Develop programs using tuples and dictionaries

**UNIT-I: Introduction to Python:** Variables, expressions and statements, order of operations

**Conditionals:** Modulus operators, Boolean expressions, logical operators, conditional execution, chained conditional, nested conditional

**Iteration:** while statement

**UNIT-II: Functions:** Function calls, Type conversion and coercion, mathematical functions, User-defined functions, parameters and arguments. Recursion

**UNIT-III: Strings:** string length, string traversal, string slices and string comparison with examples, strings are immutable, find function, string module

**List:** list values, accessing elements, list traversal, list length, list membership, list and for loop, list operations with examples

**UNIT-IV: Tuples:** Mutability, tuple assignment, tuple as return values

**Dictionaries:** dictionary operations, dictionary methods, aliasing and copying, counting letters using dictionaries

### Learning Resources:

1. Downey A, How to think like a Computer Scientist :Learning with Python, 1st Edition(2015), John Wiley
2. Lambert K.A, Fundamentals of Python–First Programs, 1st Edition ( 2015), Cengage Learning India
3. Perkovic L, Introduction to Computing using Python,2/e, (2015), John Wiley
4. Stewart Venit and Elizabeth Drake, Prelude to Programming: Concepts and Design, 6th Edition( 2015),Pearson India
5. Mark J Guzdial, Introduction to Computing and programming in Python, 3<sup>rd</sup> Edition(2013), Pearson India
6. Allen Downey, Think Python, 2nd Edition(2015),Shroff Publisher Orielly
7. <http://nptel.ac.in/courses/117106113/34>
8. <https://ocw.mit.edu/courses/electrical-engineering-and-computer-science/6-01sc-introduction-to-electrical-engineering-and-computer-science-i-spring-2011/python-tutorial/>
9. [www.scipy-lectures.org/intro/language/python\\_language.html](http://www.scipy-lectures.org/intro/language/python_language.html)

The break-up of CIE: Internal Tests + Assignments + Quizzes

1	No. of Internal Tests	: 2	Max. Marks for each Internal Tests	: 30
2	No. of Assignments	: 2	Max. Marks for each Assignment	: 5
3	No. of Quizzes	: 2	Max. Marks for each Quiz Test	: 5

Duration of Internal Tests : 90 Minutes