COURSE CODE:	CS-216
COURSE NAME:	Fundamentals of Programming-II
CREDIT HOURS:	Theory = 02 Practical = 01 Total = 03
CONTACT HOURS:	Theory = 32 Practical = 48 Total = 80
PREREQUISITE:	None
MODE OF TEACHING:	Instruction: 2 hours of Lecture per week (67%) Lab Demonstration: 3 hours of Lab work per week (33%)

COURSE DESCRIPTION:

The course introduces the fundamental concepts underlying modern computer programming. A systematic approach is used to teach students how to write programs that solve well specified problems. Emphasis is placed on the mastery of basic programming skills, with a considerable attention to the fundamental building blocks of computer programs, and the associated concepts and principles. The learning objectives are:

1. Developing comprehensive knowledge about the fundamental principles, concepts and constructs of modern computer programming.

2. Developing competencies for the design, coding and debugging of computer programs.

Course Outline:

Week	Topic
1	Introduction, Programming Fundamentals Introduction to Python 3
2	Basics of Python Programming
3	Variables, expressions, and data types
4	Numbers / math's operations
5	Decision making
6	Algorithms, pseudo code, and flow charts

7	Loops
8	Loops
9	**Mid Semester Exam**
10	Functions
11	Functions
12	Strings
13	Lists
14	Searching and sorting
15	Creating graphical user interfaces (GUI)
16	Special topics
17	Special topics
18	**End Semester Exam**

Lab/Practical:

Week	Practical
1	Introduction to Programming and familiarity with IDLE (Integrated Development Environment)
2	Variables, Expressions, Input, Output
3	Expressions, Input, Output and Data Type Conversions
4	Math's operations
5	Decision making
6	Loops
7	Loops
8	Functions
9	**Mid Semester Exam**
10	Functions
11	Strings
12	Lists
13	Searching and Sorting

14	Creating GUI
15	Creating GUI
16-17	Project demos
18	**End Semester Exam**

Tools / Software Requirement:

Eclipse, Python3

Text and Material:

1. How to Think Like a Computer Scientist by Allen Downey, 2nd Edition 2016.

2. Jennifer Campbell, Paul Gries, and Jason Montojo. Practical Programming 2nd Edition An

3. Introduction to Computer Science Using Python 3. ISBN-13: 978-1-93778-545-1.

4. Charles Severance. Python for Informatics: Exploring Information.

ASSESMENT SYSTEM:

Theoretical/Instruction	100%
Assignments	10%
Quizzes	15%
Mid Semester Exam	25%
End Semester Exam	50%

Practical Work	100%
Lab Work	70%
Lab Exam/Projects	30%