

## **CS-100: Fundamentals of ICT**

**Credit Hours:** 2-1

**Pre-requisites:** None

### **Course Objectives**

The objectives of this course are as follows:

- Familiarize the students with fundamental terms and concepts associated with ICT.
- Developing comprehensive knowledge about the fundamental principles, concepts and constructs of modern computer programming.

### **Course Contents**

- i. Introducing Computer Systems
- ii. Computer System Components
- iii. Introduction to Python Programming & Variables, expressions, and data types in Python
- iv. Variables, expressions, and data types in Python
- v. Operators (Arithmetic & Logical)
- vi. Decision making
- vii. Loops
- viii. Functions
- ix. Strings
- x. Regular Expression in Python
- xi. Lists, Data frames and Series
- xii. Sorting, Searching and other applications of lists
- xiii. Working with text and Excel files
- xiv. GUI in python

### **Course Outcomes**

After completing this course, a student will be able to:

- Understand different terms associated with ICT.
- Identify various hardware components of a computer system.
- Identify various categories of software and their usage.
- Define basic terms associated with computer networks and the internet.
- Define basic terms associated with communications and networking.
- Understand different terms associated with the internet and World Wide Web.

- Use various web tools including Web Browsers, Email clients and search utilities.
- Use text processing, spreadsheets and presentation tools.

## **Practicals**

- i. Computer Hardware
- ii. Microsoft Word - Part I (& Reading: Ch 10A)
- iii. Microsoft Power Point
- iv. Variables, Expressions, Input, Output
- v. Expressions, Input, Output and Data Type Conversions
- vi. Math's operations
- vii. Decision Making
- viii. Loops
- ix. Functions
- x. String
- xi. Lists/ searching and sorting
- xii. Project demos

## ***Recommended Books***

### **Text Book**

- "Introduction to Computers", Peter Norton, 7th Edition, 2013, McGraw-Hill.
- Python Basics: A Practical Introduction to Python 3, 4th Edition, David Amos, Fletcher Heisler, and Joanna Jablonski.

### **Reference Books**

- "Computing Essentials", Timothy O'Leary and Linda O'Leary, 2010, McGraw-Hill.
- "Using Information Technology: A Practical Introduction to Computers & Communications", Williams Sawyer, 6th Edition, 2005, McGraw-Hill.
- Introduction to Computation and Programming Using Python, John V. Guttag, The MIT Press.