CLUSTER UNIVERSITY SRINAGAR

SYLLABUS (FYUP UNDER NEP 2020)

Offered By Department of IT/Computer Applications

Semester 1st Skill Enhancement Course (SEC)

Course Title: Software Programmer-I

Course Code: SSC/Q0510 (UGCOA23S102) **Max. Marks 100**
Credits: 4 (Theory: 1, Practical: 3) **Theory: 25; Min Marks: 10**
Contact Hrs: 105 (Theory: 15, Practical: 90) **Practical: 75, Min. Marks: 30**

Objectives:

-To demonstrate digital skills, programming basics
-To understand the basics of OOPS using python programming
-To understand advanced features of python along with database connectivity

Training Outcomes:

After completing this programme, participants will be able to:
-Design algorithms to solve problems and execute test cases to convert them into code.
-Understand software development lifecycle and software design specifications.
-Demonstrate digital skills
-Understand the basics of python programming
-Explain the concepts of data structures in python and use databases in python programming
-Develop software code using core python programming
- Basics of OOPS using python programming
-Advanced features of python along with database connectivity, exception and file handling.

Unit I

Essential Digital Skills I: Role of digital technology in today's life; operation of digital devices and use the associated applications and features safely and securely; significance of displaying responsible online behaviour while browsing.

Unit II

Programming and Algorithms: Stages of computational thinking; basics of flowcharts and logic; algorithms and their significance in developing computer programs; commonly used algorithms such as searching sorting (linear search, binary search and bubble sort, insertion and selection sort); structural and procedural programming; assembler, compiler and interpreter languages.

Unit III

Analysis and Design of Software Applications: Software Development Life Cycle encompassing Business Requirements Specification (BRS); Software Requirements Specification (SRS); High Level Design (HLD) and Low-Level Design (LLD); different techniques used for Requirements Analysis; elements for measuring various aspects of software development process.

Unit IV

Introduction to Programming: Evolution of programming languages; imperative and declarative programming paradigms; features of programming languages; control structures, decision and looping control structures.