INSTITUTE OF ADVANCED RESEARCH
The University for Innovation
Established under the Gujarat Private Universities Amendment Act 2011 and recognized under section 22 and 2(f) of UGC

Department of Computer Sciences and Engineering

MSE Syllabus

Python Programming (CE314)/Problem Solving using Computers (CE343)

1	Computer Fundamentals Introduction to Computers, Characteristics of Computers, Uses of computers, Types and generations of Computers
2	Basic Computer Organization Units of a computer, CPU, ALU, memory hierarchy, Registers, I/O devices
3	Planning the Computer Program Concept of problem solving, Problem definition, Program design, Debugging, Types of errors in programming, Documentation
4	Techniques of Problem Solving Flowcharting, decision table, Algorithms, Structured programming concepts, Programming methodologies viz. top-down and bottom-up programming
5	Overview of Programming Structure of a Python Program, Elements of Python, Introduction to Python, Python Interpreter
6	Introduction to Python Using Python as calculator, Python shell, Indentation, Atoms, Identifiers and keywords, Literals, Strings, Operators-Arithmetic operator, Relational, Logical or Boolean operator, Assignment Operator, Ternary operator, Bitwise operator, Increment or Decrement operator
7	Creating Python Programs Input and Output Statements, Control statements (Looping-whileLoop), For Loop, Loop Control Conditional Statement- if...else, Difference between break, Continue and pass
8	Structures Numbers, Strings, Lists, Tuples, Dictionary

Reference Books:

1. P. K. Sinha & Priti Sinha, “Computer Fundamentals”, BPB Publications, 2007.
2. T. Budd, Exploring Python, TMH, 1st Ed, 2011
3. Dr. Anita Goel, Computer Fundamentals, Pearson Education, 2010.
4. Python Tutorial/Documentation www.python.org2010
5. Allen Downey, Jeffrey Elkner, Chris Meyers , How to think like a computer scientist