

IIIT RK Valley, RGUKT-AP
PUC Course Structure and Syllabus
Academic Year 2016-17 (2016 Batch)

Year & Sem: P2S1	Course Code: IT307	Course Name: Algorithms and Flow Charts	No. of Credits: 3	L-T-P: 1-2-0
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COURSE DESCRIPTION:

The purpose of the course is to provide the Basic fundamentals of programming.

LEARNING OUTCOMES:

A student receives a basic knowledge about fundamentals of programming language, the concept and features of the algorithm. Ways of writing the algorithm. Basic programming constructs. Elements of the flowchart and the flow of programming execution by algorithm. Types of programming languages.

PREREQUISITE: None

COURSE CONTENT:

Unit-1:

Introduction to Algorithms: What is an algorithm?- Why algorithms are necessary? – What does an algorithm need? - Qualities of a good algorithm - What makes a “good” algorithm? - Algorithm Efficiency - How to write Algorithms – Examples on Real Life – problem sets

Introduction to Flow Charts: Flowchart In Programming - Symbols Used In Flowchart - Examples of flowcharts in programming

Unit-2:

Variables and Constants: Definition of Variable and Constants– How to declare variables - Memory mapping into the Variables and Constants

Data Types: Different Data Types and their description with examples

Operators: Types of operators (Arithmetic Operators, Relational Operators and Logical Operators) – What are the Arithmetic Operators – Order of Arithmetic Operators – What are the Relation Operators – Use of Relation Operators – What are the Logical Operators and use of Logical Operators – Problem sets on calculating the expressions

Unit-3:

Tracing an Algorithm: Definition – How to Trace the Algorithm – Example on Tracing Algorithms

Conditional Statements: Structure of the Conditional statements – Ways of using conditional statements (if, if .. else, Nested if) – problem sets on Conditional Statements.

Unit-4:

Loop control structures: what is loop? – Uses of loops – types of loops – structure of the loop – what is infinite loop – problem sets on Loops

Unit-5:

Lists (Arrays): What is list? – uses of lists – how to create list – Accessing Values in Lists – Inserting values in Lists – problem set on Lists

Unit-6:

Strings: What are the Strings? – Accessing Strings using loops – String operators – problem sets on strings