3117 – COMPUTER PROGRAMMING CONCEPTS

Teaching Schedule Per Week			Progressive Assessment		Examination Schedule (Marks)			
					Theory		Practical Ex.	Total
Lectures	Practical	Credit						
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Pre-requisite	NIL	Source	Semester	Theory	Test	Total	TW	PR	Gr Total
Rationale: A sound knowledge of Computer Prog Programming language, both				75	25	100	25	--	125

COURSE CONTENTS	HRS	MKS
1. Phases In Problem Solving Problem definition, problem analysis, program design: Algorithms, flowcharts, decision tables, program coding, program testing, program documentation,	3	8
2. Basic Program Structures Sequential structure, selection structure (branching): selecting 1 out of 2 alternate paths, repetition structure (looping): condition tested at start of loop, condition tested at end of loop.	10	32
3. Syntax And Semantics Syntax And Semantics Of A Programming Language program, programmer, programming logic	2	4
4. Concept Of Code Concept Of Source Code, Object Code, Compiler, Interpreter	1	4
5. Errors In Programming Language Compile time errors, logical errors, exceptions.	2	8
6. Common Programming Languages	1	4
7. Basic Language Constructs Constants, variables, identifier, reserved words, user defined words, comments, operators: Arithmetic operators, relational operators, logical operators, unary and binary operators: Expressions: Arithmetic Expressions, Logical Expressions. Compound Logical Expressions (with logical operators). Statements: simple statement, compound statement.	6	16
8. Programming Methodology Functional programming, object oriented programming,	2	8
9. Overview Of Debugging Tracing technique, break point technique, manual (hand) tracing	2	4
10. Overview Of Testing Unit testing, integration testing, system testing	2	8
11. Documentation Methods Internal documentation, external documentation	1	4
Total		

Tutorials: Solving the following problems using flow charts the charts & Algorithm.

- Conversion of temperature from Celsius to Fahrenheit; Computation of perimeter and area of circle
- Calculation of simple & compound interest; Finding largest of 3 numbers finding sum of series
- Finding sum & count of digits from a given number & ; Searching in an array
- Sorting an array; Finding largest/smallest element in the array
- Finding the position of largest/smallest element in the array; Finding mean and median of array elements.; Revering the contents of an array; Matrix Multiplication
- Solving problem pertaining to specific Engg. Fields like Civil / Mechanical / Electrical....