

University of Mumbai

CLASS :F.E(All Branches of Engineering)		Semester-I	
SUBJECT:Computer Programming-I			
Periods per week (1 Period of 60 min.)	Lecture	3	
	Practical	2	
	Tutorial	--	
		Hours	Marks
Evaluations System	Theory Examination	3	100
	Practical	--	--
	Oral Examination	--	--
	Term Work	--	25
	Total		125

Details of the Syllabus:-

Sr.No.	Details	Hrs
01	Structured Programming using C++ 1.1.C++ as a superset of C Programming language. 1.2.C++fundamentals: Character set , Identifiers and keywords, data types, Constants & variables declaration, Operators & Expressions,Library functions, Statements, Symbolic constants, Preprocessor directives.	05
02	2.1. Data Input and Output: getchar(), putchar(), scanf(), printf(), gets(), puts(), cin, cout, stew(), endl etc 2.2. Control statements: if-else, while, do-while, goto, for statements, nested control structures, switch, break, continue statements, comma operator	06
03	3.1. Functions: Function prototypes, passing arguments to a function by value and by reference, recursion, overloading functions, storage classes 3.2. Arrays: Defining-processing array, passing arrays to function, Introduction to multidimensional arrays, Arrays and strings.	08
04	4.1. Pointers: Declaration, Referencing and de-referencing, passing pointers to functions, pointer to functions, pointers to arrays, Creation and manipulation of linked list 4.2. Structure and Unions: Defining and processing a structure.	ss07
05	5.1. Introduction to Object Oriented Programming in C++: 5.2. Classes, Objects, data encapsulation, access specifiers: private, public,	08

	protected, inheritance in details, operator overloading of Unary and Binary arithmetic operators, virtual functions, pure virtual functions.	
06	6.1. Late binding, friend function, Object as function parameter, overriding functions, overloaded constructors, copy constructor, static class members	06

Term work:

Each student is to appear for at least one written test(preferably on-line) during the term. Term work shall consist of graded answer paper of of the test and at least 5 assignments as follows:

1. Five programs developed under control structures using C++
2. Ten programs developed under arrays, functions, structures using C++
3. Ten debugged programs listing , demonstrating Object Oriented constructs and concepts.

Programs should be debugged (hand written and computer printout) and should have suitable concepts.

Recommended compilers turbo C++/Borland C++ or Visual C++

The distribution of marks for term work shall be as follows:

Laboratory work(Experiments/programs and journal)	10 marks
Test (at least one)	10 marks
Attendance (Theory and Practical)	05 marks

The final certification and acceptance of term work ensures the satisfactory performance of laboratory work and minimum passing in the term work.

Recommended Books:

- Programming in C++, Balgurusamy, Tata McGraw Hill
- Programming in C++, Schuam outline series
- Let us C, Yashwant Kanetkar,BPB publications
- Practical C++ programming , O' Reilly
- Algorithms with C++, O' Reilly