

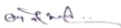
CS-111: COMPUTER PROGRAMMING

TEACHING AND EXAMINATION SCHEME:

Teaching Scheme			Credits	Marks			Duration of End Semester Examination
L	T	P/D	C	Sessional	End Semester Exam	Total	
3	0	0	3	40	60	100	3 hrs

COURSE CONTENTS:

Unit	Contents	No. of hours
I	Introduction to C++: C++ character set, C++ Tokens (Identifiers, Keywords, Constants, Operators,). Structure of a C++ Program (include files, main function), use of I/O operators (<>), Cascading of I/O operators, compilation, linking and execution. Concept of Data types: Built-in Data types: char, int, float and double; Constants: Integer Constants, Character constants - \n, \t, \b), Floating Point Constants, String Constants; Access modifier: const; Variables of built-in-data types, Declaration/Initialization of variables, Assignment statement, Type modifier: signed, unsigned, long Operator and Expressions: Operators: Arithmetic operators (+,*,/,%), Unary operator (-), Increment (++) and Decrement (--) Operators, Relation operator (>,>=,<=,<), Logical operators (!,&&,), Conditional operator: ?; Precedence of Operators; Automatic type conversion in expressions, Type casting; C++ shorthands (+=-, -=, *= /=, %=) . Conditional statements: if else, Nested if, switch case default, use of conditional operator, Nested switch case, break statement; Loops: while, do - while, for and Nested loops. Defining a function; function prototype, Invoking/calling a function: call by value, call by reference, returning values from a function, scope rules of functions and variables local and global variables.	12
II	Array, Structure and Class: One Dimensional Array: Declaration/initialization of One-dimensional array, inputting array elements, accessing array elements, Two dimensional Array: Declaration/initialization of a two-dimensional array, inputting array elements accessing array elements, Defining a Structure, declaring structure variables, accessing members of structure, Defining a class, declaring object and accessing class members	9
III	Constructor and Destructor: Constructors, Parameterized Constructors, Constructors with default arguments, Friend function, and Friend classes Inheritance: Derived Class declaration, Public, Private and Protected Inheritance, friend function and Inheritance, Forms of inheritance, virtual base class, Abstract class, Advantage and disadvantage of Inheritance.	9


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IV	Polymorphism: Classification of Polymorphism, Compile time and Run time Polymorphism, Virtual function, Pure virtual functions File Handling: Defining and Opening a File, closing a File, reading from a File, Writing into a File. Templates: Need of template, Function templates Exception Handling: Exception handling mechanism, Catch Blocks, Catch Throw an exception.	8
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Text Books:

1. The C++ Programming Language (4th Edition) By Bjarne Stroustrup
2. Lippman, S.B. and Lajoie, J., C++Primer, Pearson Education (2005) 4th ed..
3. Stroustrup, Bjarne, The C++ Programming Language, Pearson Education (2000)3rd ed.
4. Kanetkar Y., Let Us C++, BPB Publications, 2nded.
5. Balaguruswamy E., Object Oriented Programming with C++, McGraw Hill, 2013.

Reference Books:

1. Eills, Margaret A. and Stroustrup ,Bjarne, The Annotated C++ Reference Manual, Pearson Education (2002).
2. Rumbaugh, J.R., Premerlani, W. and Blaha, M., Object Oriented Modeling and Design with UML, Pearson Education (2005) 2nded.
3. Kanetkar, Yashvant, Let us C++, Jones and Bartlett Publications (2008) 8th ed.
4. Brian W. Kernighan, Dennis M. Ritchie, The C++ Programming Language, Prentice Hall)
5. Schildt H., C++: The Complete Reference, Tata Mcgraw Hill, 2