

Lecture Plan for 3rd Semester
Lecture Plan: Object - Oriented Programming Using C++

Class:3rd Sem. (CSE)

Subject Code: CIE-211

Total Lecture classes available: 44

Topics to be covered		
S.No.	Content	Total Lectures
First Term		
Unit-I		
1	Object Oriented Programming Paradigm, Basic Concepts of Object Oriented Programming, Benefits of Object Oriented Programming	3
2	Object Oriented Languages, Applications of Object Oriented Programming.	1
3	C++ Programming Language, Tokens, Keywords, Identifiers and Constants, Data Types, Type Compatibility.	2
4	Variables, Operators in C++, Implicit Type Conversions, Operator Precedence.	2
5	The Main Function, Function Prototyping, Call by Reference, Return by Reference.	2
6	Inline Functions, Function Overloading, Friend Functions, default parameter value.	2
Unit-II		
7	Specifying a class, Member Functions, Encapsulation, information hiding, abstract data types.	2
8	Objects & classes, Static Member Functions, Arrays of Objects.	2
9	Constructors & Destructors, Parameterized Constructors, Copy Constructors, Dynamic Constructors, Destructors.	2
10	Identity and behaviour of an object, C++ garbage collection.	1
11	Dynamic memory allocation, Explicit Type Conversions,	2
12	Operator Overloading.	1
Second Term		
Unit-III		
13	Inheritance, inheritance methods, Class hierarchy, derivation – public, private & protected, aggregation.	2
14	Inheritance Constructors, composition vs. classification hierarchies, Containership.	2
15	Polymorphism, categorization of polymorphic techniques, polymorphism by parameter, parametric polymorphism.	2
16	Generic function – template function, function overriding.	2
17	Run time polymorphism, virtual functions.	2
Unit-IV		
18	Standard C++ classes.	2
19	Using multiple inheritance, persistent objects, streams and files, namespaces.	2
20	Exception handling.	1

21	Generic classes, standard template library: Library organization and containers, standard containers.	2
22	Algorithm and Function objects, iterators and allocators.	2
23	Strings, streams, manipulators, user defined manipulators.	2
24	Vectors.	1

Textbook(s):

1. Stanley B. Lippman, Josée Lajoie, Barbara E. Moo, “C++ Primer”, Addison-Wesley Professional, 2012
2. Ivor Horton, “Using the C++ Standard Template Libraries”, Apress, 2015.
3. R. Lafore, “Object Oriented Programming using C++”, Galgotia.

References:

1. A.R.Venugopal, Rajkumar, T. Ravishanker “Mastering C++”, TMH
2. Bjarne Stroustrup, “Programming: principles and practice using C++”, Addison-Wesley, 2015.
3. Bjarne Stroustrup, “A Tour of C++”, Addison-Wesley Professional, 2018.
4. Bjarne Stroustrup, “The C++ Programming Language”, 4th Edition, Addison Wesley Professional, 2013
5. Peter Van Weert and Marc Gregoire, “C++17 Standard Library Quick Reference: A Pocket Guide to Data Structures, Algorithms, and Functions”, Apress (2019)
6. Rumbaugh et. al. “ Object Oriented Modelling & Design”, Prentice Hall
7. G . Booch “Object Oriented Design & Applications”, Benjamin,Cummings.
8. E.Balaguruswamy, “Objected Oriented Programming with C++”, TMH
9. Steven C. Lawlor, “The Art of Programming Computer Science with C++”, Vikas Publication.
10. Slobodan Dmitrović, Modern C++ for Absolute Beginners”:A Friendly Introduction to C++ Programming Language and C++11 to C++20 Standards”, Apress, 2020.
11. nptel.ac.in/courses/106105234 <https://share.google/WB8rw33s1xZJHHGM3>
12. nptel.ac.in/courses/106107574 <https://share.google/6tqWN2DSogwF8CaPf>