

GUJARAT TECHNOLOGICAL UNIVERSITY

B.E. Semester: IV

Computer Science And Technology

Subject Code: 140705

Subject Name: Object Oriented Programming with C++

| Sr.No | Course content | Hours |
|-------|---|-------|
| 1 | Concepts of OOP : Introduction OOP, Procedural Vs. Object Oriented Programming, Principles of OOP, Benefits and applications of OOP | 4 |
| 2 | C++ Basics : Overview, Program structure, namespace, identifiers, variables, constants, enum, operators, typecasting, control structures | 6 |
| 3 | C++ Functions : Simple functions, Call and Return by reference, Inline functions, Macro Vs. Inline functions, Overloading of functions, default arguments, friend functions, virtual functions | 6 |
| 4 | Objects and classes : Basics of object and class in C++, Private and public members, static data and function members, constructors and their types, destructors, operator overloading, type conversion | 8 |
| 5 | Inheritance : Concept of Inheritance, types of inheritance: single, multiple, multilevel, hierarchical, hybrid, protected members, overriding, virtual base class, | 8 |
| 6 | Polymorphism : Pointers in C++, Pointers and Objects, this pointer, virtual and pure virtual functions, Implementing polymorphism | 6 |
| 7 | I/O and File management : Concept of streams, cin and cout objects, C++ stream classes, Unformatted and formatted I/O, manipulators, File stream, C++ File stream classes, File management functions, File modes, Binary and random Files | 8 |
| 8 | Templates, Exceptions and STL : What is template? function templates and class templates, Introduction to exception, try-catch-throw, multiple catch, catch all, rethrowing exception, implementing user defined exceptions, Overview and use of Standard Template Library | 8 |

Books:

1. Object Oriented Programming With C++, E Balagurusamy, TMH
2. C++ Programming, Black Book, Steven Holzner, dreamtech
3. Object Oriented Programming in Turbo C++, Robert Lafore, Galgotia
4. Object Oriented Programming with ANSI and Turbo C++, Ashok Kamthane, Pearson
5. The Complete Reference C++, Herbert Schilitz, TMH