

COURSE CODE	COURSE TITLE	L	T	P	C
1154IT102	OBJECT ORIENTED PROGRAMMING	3	0	0	3

Course Category:

~~Foundation (0)/Program Core (1)/ Program Elective (2) / Allied Elective (3) / University Elective (4) / Value Education Elective (5) / Independent Learning (6) / Industry – Higher Learning Institute Interaction (7)~~

Course Objectives:

Students undergoing this course are expected to:

- Understand of the utility of object oriented programming over procedure oriented programming.
- Know the concept of code reusability to use third party code in the form of predefined classes to write their programs.
- Use the programs written by others and write the programs that can be used by others without exposing the source code, using package and interface concepts.
- Understand exception handling mechanism for handling exceptional situation that occur during run time.

Course Outcomes:

Students undergoing this course are able to:

- Write computer programs in java using object oriented concepts.
- Write sophisticated programs that take care of exceptional situations.
- Develop sophisticated, interactive, user friendly software for real world applications.
- Develop reusable software components/tools which can be used for developing other sophisticated software.

Pre-requisites:

Sl. No	Course Code	Course Name
1	1150CS201	Problem Solving using C

Course Content

UNIT I

9

Object oriented programming concepts – objects – classes – methods and messages – abstraction and encapsulation – inheritance – abstract classes – polymorphism.

Introduction to C++ – classes – access specifiers – function and data members – default arguments – function overloading – friend functions – const and volatile functions - static members – Objects – pointers and objects – constant objects – nested classes – local classes

UNIT II

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Constructors – default constructor – Parameterized constructors – Constructor with dynamic allocation – copy constructor – destructors – operator overloading – overloading through friend functions – overloading the assignment operator – type conversion – explicit constructors

UNIT III**9**

Function and class templates - Exception handling – try-catch-throw paradigm – exception specification – terminate and unexpected functions – Uncaught exception.

UNIT IV**8**

Inheritance – public, private, and protected derivations – multiple inheritance - virtual base class – abstract class – composite objects Runtime polymorphism – virtual functions – pure virtual functions

UNIT V**10**

RTTI – typeid – dynamic casting – RTTI and templates – cross casting – down casting .

Streams and formatted I/O – I/O manipulators - file handling – random access – object serialization – namespaces - std namespace – ANSI String Objects – standard template library.

Text Book

1. B. Trivedi, “Programming with ANSI C++”, Oxford University Press, 2007.

Reference Books

1. Ira Pohl, “Object Oriented Programming using C++”, Pearson Education, Second Edition Reprint 2004..
2. S. B. Lippman, Josee Lajoie, Barbara E. Moo, “C++ Primer”, Fourth Edition, Pearson Education, 2005.
B. Stroustrup, “The C++ Programming language”, Third edition, Pearson Education, 2004