

CS010 402: Object Oriented Programming

Teaching scheme Credits: 4

Module I (8 hours)

Introduction to OOP - Evolution of object oriented languages - Need of Objects - Definition of Object Oriented Language – Classes and Objects – Creating and Using Classes and objects – Member functions and variables – Constructors –multiple and parameterized constructors ,copy constructors – constructors with default arguments- Destructors.

Module II (13 hours)

Inheritance and Access Control - Member access control in classes – Friend functions and classes – Extending classes - Public Private and Protected Inheritance – Classification of Inheritance – Single – Multiple – Multilevel – Hierarchical – Hybrid.

Module III (14 hours)

Polymorphism – Runtime and compile time polymorphism – overloading functions and operators – selecting friend member function for operator overloading - Virtual methods – pure virtual methods – Abstract classes - applications of abstract classes.

Module IV (13 hours)

Virtual Destructors – Virtual Base Classes - Template- class templates and function templates- Creating and using templates – Namespaces-Dynamic Objects - Dynamic object allocation - Inline functions. Exception Handling-basics of exception handling-exception handling mechanism- Throwing and Catching Mechanism-Rethrowing and Specifying exceptions.

Module V (12 hours)

Data file operations –opening and closing files-reading and writing from file-Classes and file operations-Other object oriented languages – Java – Object oriented features in Java – Comparison with C++-Object oriented system development-object oriented notations and graphs-object oriented analysis-object oriented design.