Course: IT-114 (Object-Oriented Programming)

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Credit Structure: 3-0-4-5

Course Objectives:

This course teaches concepts of object-oriented programming and enables the students to design, develop, and implement solutions for real world problems using object oriented programming languages C++ and Java.

Course content outlines

Principles of object-oriented programming, i.e. Abstraction, Encapsulation, Inheritance, and Polymorphism. Reflections and Persistence. Demonstrate how C++ and Java supports these features. Study of some of APIs like IO streams, Swing/GTK+

In lab hours, there would be series of programming exercises/mini projects to be done in C++/Java, preferably on linux platform, and using open source tools.

Suggested Texts:

1. Big C++, Horstmann, Cay S. & Budd, Timothy, John Wiley & Sons
2. Mastering object-oriented design in C++, Horstmann, Cay S., John Wiley & Sons
3. Big Java, Horstmann, Cay S., John Wiley & Sons
4. Introduction to Object Oriented Programming with Java, C. Thomas Wu, TMH
5. Understanding Object-Oriented Programming with Java, Budd, Timothy, Pearson Education
6. Core Java, Volume I, Cay Horstmann and Gary Cornell, the Sun Microsystems Press, Pearson Education.
7. Problem Solving with C++, 4th ed, Walter Savitch, Pearson Education
8. Java 2: The Complete Reference, TMH
9. C++: The Complete Reference, TMH
10. C++ How to program, 5th ed, Deitel and Deitel
11. C++ Primer, 4th ed, Stanley B. Lippman, Josée LaJoie, Barbara E. Moo, Barbara E. Moo, Addison Wesley
More readings:

1. Object-oriented software construction, Meyer, Bertrand, Prentice Hall
2. Foundations of object-oriented languages : types and semantics, Bruce, Kim B., MIT Press
3. Object Oriented Analysis and Design, Andrew Haigh, TMH
4. Introduction to object-oriented programming, Budd Timothy, TMH