IT614-Programming Paradigms (3 – 0 – 2 – 4)

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Objective
Programming languages are an essential means to express and implement real-world problems in computer systems. While programming languages may differ significantly in syntax and semantics, they share many common design concepts, translation mechanisms, and properties. The IT614 course, Programming Paradigms, aims to cover the fundamental concepts underlying imperative and object-oriented programming languages, such as, C, C++, and Java. After completion of this course, students will display in-depth understanding of how different programming language concepts are implemented by a language designer, and their impact on programmer and software systems.

Contents
- Introduction to programming; compilers and interpreters; syntax and semantics.
- Imperative languages; control structures; data types and their representation.
- Arrays; strings; pointers
- Functions, methods; parameter passing; scope and visibility.
- Objects, classes; data and methods; constructors and destructors.
- Inheritance, Polymorphism; Containers and Iterators.
- Exception handling; Concurrent programming: threads, synchronization, communication.

[Programming Languages: C/C++ and Java]

Book (any one)

Grading Policy
In-sem Exam (1) : 20 
End-sem Exam: 30 
Lab Exams (2): 30 
Quizzes/class participation: 20%