CENG 443

Introduction to Object Oriented Programming Languages and Systems

Syllabus

- **Instructor**
  Asst. Prof. Selim Temizer, temizer@ceng.metu.edu.tr, http://selimtemizer.com

- **Assistant**
  Yusuf Mücahit Çetinkaya, yusuf.cetinkaya@ceng.metu.edu.tr

- **Prerequisite**
  Basic knowledge of object oriented programming paradigm, process/thread concepts, UML and SQL

- **Course objectives/goals**
  The objectives of this course are to enable students:
  - to use object-oriented programming concepts and constructs to represent software systems,
  - to understand the internal, architectural and usage aspects of the state-of-the-art methods and techniques to develop efficient, secure, robust, multi-threaded, networked, from standalone to enterprise-level object-oriented applications, and
  - to comprehend how to apply them practically.

- **Grading (Tentative)**
  Attendance and Participation 10 % (Attendance will be weighted by pop quizzes)
  Assignments (3) 36 % (Bonuses are always provided for extra work)
  Midterm 26 %
  Final 28 %

- **Some References (No Required Textbook)**
  B. Eckel. Thinking in Java. Prentice Hall.

- **Important Notes**
  - In order to be allowed to the final test, students should satisfy **ALL** of the following requirements:
    - **Quiz weighted attendance** grade should cover at least 80% of the lectures
    - Submit all of the assignments
    - Score at least 40 (out of 100) on each of the assignments
    - Score at least 40 (out of 100) on the midterm
  - Medical reports (METU approved) for missing lectures/deadlines should be submitted within **1 week**.
  - Cheating on attendance, homeworks, tests, etc. is punished severely (disciplinary action is taken)!

- **Outline (Tentative)**
  Quick Review of OOP Basics with Java (primitives, expressions, statements, constructs, classes, objects, abstract classes, interfaces, inheritance, polymorphism, encapsulation, packages), Advanced OOP with Java (inner classes, exception handling, garbage collection, I/O streams, generics, new features), Reflection, Design Principles and Patterns, Threading Basics and Concurrency, Database Connectivity, Serialization, Remote Method Invocation, Virtual Machine Internals, Security, Overview of Enterprise Architectures.