CS 111: Introduction to Computing in Engineering and Science
Summer 2004

Description: This course will be an introduction to technical programming for solving engineering and scientific problems. Topics will include basic computer literacy, MATLAB as a technical programming language, and object-oriented programming concepts using Java.

Instructor: Selim Aksoy (Office: EA 423, Email: saksoy@cs.bilkent.edu.tr)

TA: Selim Çıracı (Office: EA 403, Email: selimc@cs.bilkent.edu.tr)


Schedule:
Lectures: Mon 12:40–14:30, Wed 12:40–14:30, Fri 12:40–14:30 (EB 202)
Labs: Tue 13:40–17:30, Thu 13:40–17:30 (B 302)

Texts:
J. Lewis and W. Loftus, *Java Software Solutions*, Addison-Wesley (3rd edition)

Homework: There will be a new assignment every week. Late homework will not be accepted so please do not wait until the night before they are due to start them.

Tests: There will be in-class quizzes, an in-class open-book midterm and an in-class open-book final.

Grading (tentative):
Lab work: 25%
HW: 10%
Quiz: 10%
Midterm: 25%
Final: 30%
Topics:

- Introduction to Computer Systems (J: 1.0, 1.1, 1.2, 1.4, 1.5)
- MATLAB
  - MATLAB Basics (M: 1.3, 1.4, 2.1, 2.2, 2.4, 2.5, 2.6, 2.7, 2.8.1, 2.9, 2.10, 2.13)
  - Top-down Program Design, Relational and Logical Operators, Branches, Loops (M: 3.1, 3.2, 3.3, 3.4, 3.6, 4.1, 4.2)
  - Plotting (M: 2.11, 3.5)
  - User-defined Functions (M: 5.1, 5.2, 5.7)
  - Additional Data Types: 2-D Arrays, Logical Arrays, Strings (M: 2.4, 2.8.2, 4.3, 6.2)
  - Input/Output Functions (M: 8.1, 8.2, 8.3, 8.4, 8.5, 8.6)
- Java
  - Java Basics (J: 2.0–2.9)
  - Java Program Statements (J: 3.0–3.9)
  - Writing Classes in Java (J: 4.0–4.5)

Lecture Schedule:

Week 1: Introduction to Computer Systems
Week 2: MATLAB Basics
  Top-down Program Design
Week 3: Relational and Logical Operators
  Branches, Loops
Week 4: Vectors and Plotting
  User-defined Functions
Week 5: Additional Data Types: 2-D Arrays, Logical Arrays, Strings
  Input/Output Functions
Week 6: Java Basics
  Java Program Statements
Week 7: Writing Classes in Java
Week 8: Java Review

Lab Schedule:

Week 1: No Lab
Week 2: Introduction to Computer Systems
  Introduction to MATLAB
Week 3: Subarrays, Scripts, Relational and Logical Operators
Week 4: Branches and Loops
  Plotting
Week 5: User-defined Functions
  2-D Arrays and Logical Arrays
Week 6: 2-D Arrays and Strings
  Input/Output Functions
Week 7: Basic Operations in Java
  Branches and Loops in Java
Week 8: Writing Classes in Java