

CS 111: Introduction to Computing in Engineering and Science

Spring 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)

TAs:

Aslı Ayaz (Office: EA 531, Email: ayaz@cs.bilkent.edu.tr)

Emine Zeynep Erson (Office: EA 529, Email: erson@cs.bilkent.edu.tr)

Özgün Babur (Office: EA 531, Email: ozgun@cs.bilkent.edu.tr)

Yasemin Satıroğlu (Office: EA 529, Email: yasemins@cs.bilkent.edu.tr)

Course Web Page: <http://www.cs.bilkent.edu.tr/~saksoy/courses/cs111/index.html>

Schedule:

Section 1: Lectures: Wed 10:40–12:30 (BZ 08), Fri 11:40–12:30 (BZ 08)

Lab: Thu 13:40–17:30 (ENGL)

Section 2: Lectures: Mon 8:40–10:30 (BZ 04), Thu 10:40–11:30 (BZ 04)

Lab: Tue 13:40–17:30 (ENGL)

Texts:

S. J. Chapman, *MATLAB Programming for Engineers*, Thomas Brooks/Cole (2nd edition)

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

Homework: There will be a new assignment every 2 weeks. 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 midterm and an in-class 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
Week 3: Top-down Program Design, Relational and Logical Operators
Week 4: Branches, Loops
Week 5: Vectors and Plotting
Week 6: User-defined Functions
Week 7: Additional Data Types: 2-D Arrays, Logical Arrays
Week 8: Additional Data Types: Strings
Week 9: Input/Output Functions
Week 10: MATLAB Review
Week 11: Java Basics
Week 12: Java Program Statements
Week 13: Writing Classes in Java
Week 14: Writing Classes in Java
Week 15: Java Review

Lab Schedule:

Week 1: No Lab
Week 2: Introduction to Computer Systems
Week 3: Introduction to MATLAB
Week 4: Subarrays, Scripts, Relational and Logical Operators
Week 5: Branches and Loops
Week 6: Plotting
Week 7: User-defined Functions
Week 8: 2-D Arrays and Logical Arrays
Week 9: 2-D Arrays and Strings
Week 10: Input/Output Functions
Week 11: Introduction to Java
Week 12: Basic Operations in Java
Week 13: Branches and Loops in Java
Week 14: Writing Classes in Java
Week 15: No Lab