E7: Introduction to Computer Programming for Scientists and Engineers

1 Course Objectives

E7 is an introductory course on computer programming for lower-division students in science and engineering. The principal goal of the course is to introduce basic computer programming concepts and apply them to computer-based problem-solving methods. The course stresses hands-on computer programming using MATLAB, a powerful high-level programming environment.

2 Course Format

E7 consists of classroom lectures, computer laboratory sections, and classroom discussions. Faculty instructor delivers lectures and discussions, while student instructors (GSIs) supervise laboratory sections.

Lectures will begin on Wednesday, August 23, and held Mondays and Wednesdays in 2050 Valley Life Sciences (VLS), from 9:10 to 10:00 am. Discussions will begin on Friday, August 25, and be held Fridays in 2050 VLS from 9:10 to 10:00 am. The discussions will cover additional exercises, present and discuss the upcoming homework/laboratory assignments, and answer questions.

Laboratory sections will begin on the second week of instruction, starting Monday, August 28.

3 Course Website

The course website in hosted at https://bcourses.berkeley.edu/. All material, schedules, homework, and communication regarding the course will be handled through this website. Your bCourses account will also give you secure access to your grades and to a discussion board from where you will be able to communicate with the faculty, GSIs, and your classmates. For the discussion board we will be using Piazza (linked via bCourses), which is accessed via the E7 bCourses site. The discussion board is an excellent forum to post questions regarding the coursework. You are strongly encouraged to post *technical* questions on the discussion board, as opposed to communicating them by private email. It is your responsibility to check the E7 bCourses site frequently, as important information about the course will be routinely posted on bCourses without necessarily being announced in the lectures.

4 Teaching Staff

Instructor: Professor Michael Frenklach (frenklach@berkeley.edu), 6105B Etcheverry Hall.

Head GSI: Jason Simon (jasonsimon@berkeley.edu)

Contact information for the other GSIs will be available on the course website. Logistical matters pertaining to the course should be addressed to the head GSI.

5 Course Text and Programming Language

There is no required textbook for the course.

We highly recommend you obtain ***the latest release of the Student Version of MATLAB***, which can be obtained (free) via UC Berkeley's Software. The Matlab software comes with extensive built-in help. Additional help and tutorials can be found on the Mathworks website. Among other things, this website contains documentation, including manuals that you can download for free. In addition to the Matlab documentation, we will post handouts on bCourses.

6 Assignments

There will be approximately 12 assignments (generally due every week). **All assignments must be turned in no later than 11:59 pm on the Friday of the week they are due**. Assignments are meant to be worked on both outside of class and during laboratory sections. Here are some important guidelines:

(i) The procedure for working on your assignments will be explained during the Discussion Session on Friday, August 25. Weekly laboratory assignments will be available for download (generally on Thursdays) in the form of a PDF file. You will also have to download an auto-grader Matlab pfile (generally a few days before the assignment due date), which you can run after you have completed part or all of your assignment. The auto-grader pfile will grade your work so you can see your score. *Please use the exact function signatures as specified for each problem.* You need to upload a .zip file containing all the m files to bCourses no later than 11:59 pm on the Friday of the week they are due. Name your zipped file lastname_firstname_hw1 for the first homework, etc. You can upload this file multiple times until the deadline and only your last uploaded file will be preserved. Further details will be provided in each assignment.

(ii) **Owing to the size of the class, late assignments will not be accepted under any circumstances**.

(iii) For grading purposes, two of the lowest grades assignments will be dropped.

(iv) It is acceptable to discuss with your classmates the material contained in the assignments. However, we require that you complete all assignments on your own. **Copying someone else's work or allowing your work to be copied constitutes cheating, and will result in at least zero credit for the entire assignment, as well as possible disciplinary action (see the Academic Honesty section below).**

7 Midterms and Final

There will be two 50-minute midterm examinations during the Friday discussion times (see calendar for dates). Also, there will be a 3-hour final examination on Monday, December 11, 7:00-10:00 pm (Final exam Group 4). You will be required to provide your student ID before entering the examination room. **It is your responsibility not to enroll in another course that is part of Exam group 4 (which includes all courses taught MWF & MTWTF, 9 & 9:30 am).**

8 Academic Honesty

The student community at UC Berkeley has adopted the following Honor Code: "*As a member of the UC Berkeley community, I act with honesty, integrity, and respect for others*." Your E7 instructors join you in pledging to adhere to this code.

Please note that copying programming code (even if it is only a portion of a larger program) constitutes cheating and we plan to deploy software that will detect when code has been copied. Cheating will result in a 0 on the assignment and a report submitted to The Center for Student Conduct.

For further details, see the Berkeley Campus Code of Student Conduct at: http://sa.berkeley.edu/student-code-of-conduct.

9 Grades and Grading

The course grade will be assigned based on the following percentages:

        30 %   Homework Assignments
        20 %   Midterm 1
        20 %   Midterm 2
        30 %   Final

If you find any discrepancies between the issued grades and the grades posted on bCourses, please bring them to the attention of one of your laboratory GSIs immediately.

10 Re-grading

If you believe that a problem (of Assignment or Midterm) was graded incorrectly, write a short paragraph outlining your case and submit it into a REGRADE folder on bCourses. You have **one week** from the time you receive your Assignment or Midterm back to submit the regrade request.