ME132 Spring 2015

ME132 is an introductory course on dynamic systems and feedback for undergraduate students in Engineering and Science majors. The principal goal of the course is to introduce basic concept of feedback controls, as well as the mathematical tools for system analysis and controller design.

Teaching Staff

Instructor: Prof. Francesco Borrelli (fborrelli@berkeley.edu), 5132 Etcheverry. Office hours are:

- **Tu-Th** 10 - 11:30

Instructor: Prof. Roberto Horowitz (horowitz@berkeley.edu), **5138 Etcheverry**. Office hours are:

- **Monday 10:30-11:45**
- **Wednesday 10:30-11:45**

Occasionally, these will need to be changed. We will try to post an announcement on weekends, alerting you to any changes in office hours in the upcoming week.

Primary GSI: Ms. Qian Zhong (qzhong@berkeley.edu), **1171 Etcheverry**. Office hours are:

- **Thursday 10:00-11:00 am**
- **Friday 10:00-11:00 am**

Secondary GSI: Matt Wright (mwright@berkeley.edu**), 2107/1171 Etcheverry.** Office hours are:

- **Monday 10:00-11:00 AM, 2107 Etcheverry**
- **Wednesday 3:00-4:00 PM, 1171 Etcheverry**

Email to instructor and GSIs: Please include ME132 in the subject, when sending e-mail to the instructors and GSI

Course Format

ME132 consists of classroom lectures, computer laboratory sections and online quizzes. Faculty instructor delivers lectures, while graduate student instructor (GSI) supervises laboratory sections.

I. CLASS/LABORATORY SCHEDULE

Three hours of lectures and one hour of laboratory per week.

Lectures: Mon/Wed/Fri, 9am-10am, 50 Birge Hall.

Laboratory sections: (Begin on Wednesday, January 28th.)

Sec 1: Wed 1pm-2pm, 2107 Etcheverry

Sec 2 : Wed 2pm-3pm, 2107 Etcheverry

Sec 3: Friday 11-12, 2107 Etcheverry

II. ASSIGNMENTS

(1) Homework

Homework will be posted on bCourses. The due date will be announced when the homework is posted. Homework will be due at **5:00 pm sharp on the due date**. No late homework will be accepted. Turn in your homework at the Drop Box (labeled ME 132) in Etcheverry Hall.

Homework solutions will be posted on bCourses after the due date. Graded homework will be returned in the next week.

(2) Laboratory Assignments

There will be laboratory assignments every week. Ideally, you will finish the lab assignment while attending the lab (Wednesday or Thursday). All reports must be submitted to bCourses no later than **5:00 pm on the Monday** of the following week. Late reports will not be accepted under any circumstances, so make sure to upload your assignments on time. Leave a few minutes of extra time to avoid any problems caused by heavy internet traffic

III. MIDTERMS AND FINAL EXAM

Closed book, but sheets of notes are allowed, as described below. The midterm dates are tentative.

Midterm 1: Monday, February 23, 9am-10am (in class). One sheet of handwritten notes allowed (both sides), plus calculator.

Midterm 2: Monday, April 6, 9am-10am (in class). Two sheets of handwritten notes allowed (both sides), plus calculator.

Final: Monday, May 11, 7:00-10:00PM. Three sheets of handwritten notes allowed (both sides), plus calculator.

IV. PIAZZA

The course discussion forum Piazza is integrated into bCourses (see the left sidebar). The instruction team will monitor and contribute to this forum, and you are encouraged to use it to seek help from the

instructors and your peers. You are also encouraged to contribute not only questions, but also answers to questions that you are comfortable with.

Course Text and Requirements

In ME132, you are going to learn how to program in Matlab/Simulink. The ME132 Computer Laboratory (1171/2107 Etcheverry) provides computers with Matlab. We highly recommend (but do not require) that you obtain the latest Student Version of Matlab, which can be purchased from Mathworks at the following link, Student Version of MATLAB (Links to an external site.). The Matlab software comes with extensive built-in help, and tutorials can be found on the Mathworks website (Links to an external site.). Among other things this website hosts documentation, including manuals that you can download.
There is no required text for the course. We will use the ME132 Class Notes (~350 page set of notes, with homework problems), which will soon will be available in bcourse. These notes may be update and/or expanded as semester progresses.

There is a good book, "Feedback Systems", by Karl Astrom and Richard Murray that we will refer to. You can purchase the book, or obtain a pdf-version free-of-charge. Check the wiki for more information: http://www.cds.caltech.edu/~murray/amwiki/index.php/Main_Page (Links to an external site.)

Grades and Grading

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

- 20% Homework
- 20% Midterm 1
- 20% Midterm 2
- 40% Final

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

(Links to an external site.)

Academic Honesty

It is acceptable to discuss with your classmates the material contained in the quizzes and laboratory assignments. *However, we require that your submissions represent your own work.* Copying someone else's work or allowing your work to be copied constitutes cheating, and will result in zero credit for the entire assignment. In addition, Berkeley students who are found to cheat in assignments or exams will be referred to Student Judicial Affairs. For details, see the website of the Berkeley Center for Student Conduct.

Honor Code

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 MechE 132 instructors join you in pledging to adhere to this code.