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

Teaching Staff

Instructor: Prof. Andrew Packard (apackard@berkeley.edu (mailto:apackard@berkeley.edu)), 5116 Etcheverry. Office hours are:

- **Tuesday, 9:00-10:00AM (5116 Etcheverry)**
- **Tuesday, 5:00-6:00PM (5116 Etcheverry)**
- **Wednesday, 9:30-10:30AM (5116 Etcheverry)**
- **Thursday, 1:30-2:30PM (5116 Etcheverry)**

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

GSI: Conrad Holda (conradholda@berkeley.edu), 1171 Etcheverry. Office hours are:

- **Monday, 10:00 - 11:00 AM (GSI Office Hesse)**
- **Wednesday : 2:00 - 3:00 PM (1171 Etcheverry)**
- **Friday : noon - 1:00 PM (1171 Etcheverry)**

GSI: Yujia Wu (yujia.wu@berkeley.edu), 1171 Etcheverry. Office hours are:

- **Wednesday, 10:00AM-Noon (1171 Etcheverry)**

Course Format

ME 132 consists of classroom lectures, weekly homework assignments, 2 midterm exams, a final exam, computer/Lego laboratory sections and (some) online quizzes. Faculty instructor delivers lectures, while graduate student instructors (GSI) supervise laboratory sections.

I. CLASS/LABORATORY SCHEDULE

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

Lectures: Mon/Wed/Fri, 3:00PM-4:00PM, 105 North Gate

Laboratory sections: (**beginning on Tuesday, August 29**)

Sec 101: **Thursday**, Noon-1:00PM, 1171 Etcheverry

Sec 102: **Tuesday**, 11:00AM-Noon, 1171 Etcheverry

Sec 103: **Tuesday**, 10:00-11:00AM, 1171 Etcheverry

Sec 104: **Thursday**, 5:00-6:00PM, 1171 Etcheverry

II. ASSIGNMENTS

(1) Homework

Homework will be posted on bCourses on Fridays and due at **5:00 pm sharp the following Friday**. No late homework will be accepted. More information about how/where to turn in assignments will be posted soon.

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 (Tuesday or Thursday). All reports must be submitted to bCourses no later than **5:00 pm on the following Monday**. 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.

(3) Online Quizzes

There will be occasional online quizzes at bCourses after each lecture. All quizzes associated with a specific lecture must be completed before the next lecture, unless otherwise specified. **You will be able to take each quiz as many times as you like and only your best score will be recorded**. Hence there is no reason to get less than 100% on all quizzes.

III. MIDTERMS AND FINAL EXAM

Closed book, but sheets of notes are allowed, as described below

Midterm 1: Friday, September 29, 3-4PM (in class). One sheet of handwritten notes allowed (both sides), plus calculator.

Midterm 2: Wednesday, November 1, 3-4PM (in class). Two sheets of handwritten notes allowed (both sides), plus calculator.

Final: Wednesday, December 13, 7:00-10:00PM. Three sheets of handwritten notes allowed (both sides), plus calculator.

If you are on a sports team, or in the band, or represent the university in a similar manner, and will not be available on these times, let me know as soon as possible, and we will make appropriate scheduling arrangements.

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. Everyone should be automatically signed up.

Course Text and Requirements

There is no required text for the course. We will use PowerPoint slides and extensive notes prepared by Packard. These resources will be available on bCourses.

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 (http://www.cds.caltech.edu/~murray/amwiki/index.php/Main_Page)**

In ME132, you are going to use Matlab, as well as learning how to use Simulink and the Control System Toolbox, and program the Lego EV3 Mindstorm system using the robotC language. The ME132 Computer Laboratory (1171 Etcheverry) provides computers with Matlab/Simulink and all relevant toolboxes, as well as robotC. We highly recommend that you install Matlab on your personal computer, using the license available to all UC Berkeley registered students, which can be obtained at **https://software.berkeley.edu/ (https://software.berkeley.edu/) (http://bcourses.berkeley.edu)**

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Academic Honesty

It is acceptable to discuss with your classmates the material contained in the homework assignments, online-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 (http://sa.berkeley.edu/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.

Grades and Grading

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

- 30% Homework
- 10% Laboratory Assignments
- 3% Online Quizzes (via bCourses)
- 15% Midterm 1 (Sept 29)
- 17% Midterm 2 (Nov 1)
- 25% Final (Dec 13)

If you find any discrepancies between the issued grades and the grades posted on bCourses, please bring them to the attention of GSI immediately. In general, the course is curved, to College and Department guidelines, with a 3.0-3.1 GPA. I will say more about this in the first lecture.