ME 144L: Dynamic Systems and Controls Lab
Spring 2022, Unique Nos. 18775 to 18815 (9 sections)

Instructor:	Prof. Raul G. Longoria
Office, contact info:	ETC II 5.134B, `r.longoria@mail.utexas.edu`
Office hours:	MW (1-2) via Zoom (see Canvas for link)
TAs:	See Canvas page for Weekly Schedule and TA info

1. Course aims / objectives: The main goal of this lab is to get hands-on training and experience with methods used in modeling and experimentation, programming, analysis, simulation, basic instrument and sensor usage, and application of feedback control to engineering systems.

2. Format and procedures: Lectures will be made via Zoom. The semester schedule on the Canvas course home page will have links to lab work and assignments. Canvas will be used to submit assignments.

3. Course Schedule: This syllabus projects plans and objectives. Adjustments may be made based on how the class is progressing, status of lab equipment, etc. *Always* refer to the Canvas home page for announcements and updates. See Table 1 for tentative list of labs.

Table 1: Tentative schedule of topics and labs

Week(s)	Lab Topic
1-3	Lab 1: Python for DSC Lab
4-6	Lab 2: Sensors, Measurement, Arduino and Python
7-8	Lab 3: Two-can system study
9	Spring break
10-12	Lab 4: Two-story system study
13-16	Lab 5: PMDC motor drives, sensing, and control

4. Prerequisites: This lab course is related to but mostly taught independently of the lecture-based course ME 344 (Dynamic Systems and Controls), which is a co-requisite for registration in this laboratory. You should have credit for ME 340/140L, but mostly you should be comfortable making electronic component connections, wiring, etc. It is expected you can recall some computational algorithms introduced in ME 318M.

5. Course Requirements and Policies: Lab attendance is required, including those presented online via Zoom. Lab sessions will be recorded as a backup given the need for some students to progress given the uncertainty presented by the ongoing Covid-19 pandemic. Contact your TA if you have any problems attending. It also expected that you will respect and practice civility with the TA, fellow students, and the course instructor.

6. Course Readings/Materials: All course notes and lecture slides will be provided on the course Canvas site. There is no required textbook, but your ME 344 text may be useful. We will provide guidance on using Arduino and Python, but you are also expected to take advantage of extensive online resources to aid your learning and application of Arduino and Python.

7. Assignment Types: Unless otherwise indicated, all assignments are submitted as PDF documents to Canvas. Your submitted work must be professionally prepared and organized. If not typed, writing must be neat and legible. You are encouraged to keep a notebook, but it will not be graded.

There is no final exam. The types of assignments in this lab are described below.
(a) *Pre-Laboratory (PL)*: Any pre-lab assignments will be due before lab.
(b) *Laboratory Evaluations (LE)*: Lab evaluations (LEs) are reports that address specific questions or problems investigated during the laboratory. Due dates will be specified weekly by your TA. Clear and concise writing, drawings/schematics, and graphs are expected.
(c) *Demonstrations*: There will be emphasis on getting experiments to run, so some grades will be given for demonstration of your setup, to explain how you did something in the lab, your participation, etc. The TA will assign this grade in on a weekly basis.

8. Grading and Evaluation: You will be given feedback on what the TA expects on assignments. Late will be handled on a case-by-case basis by your TA. You must contribute individually-written assessments, summaries, etc. While it is expected you may work collaboratively, prepare your own laboratory write-ups.
(a) *Grading Policy*: **PL** = 15%, **LE** = 50%, **Demonstrations/participation** = 25%, **Final quiz** = 10%.
(b) *Late policy and makeups*: The TA will handle late submissions on a case by case basis, and there may be penalties applied to late submissions. Make-ups or need for make-ups will also be handled on a case-by-case basis.

9. Course Outcomes: This course addresses the following ABET program outcomes: 1, 6, 7. In particular, attention by the student should be given to Outcome 4, "Ability to set up and conduct experiments, and to present the results in a professional manner."

10. Academic Integrity: University of Texas Honor Code - The core values of The University of Texas at Austin are learning, discovery, freedom, leadership, individual opportunity, and responsibility. Each member of the university is expected to uphold these values through integrity, honesty, trust, fairness, and respect toward peers and community.

Each student in this course is expected to abide by the University of Texas Honor Code. Any work submitted by a student in this course for academic credit will be the student's own work. For this course, collaboration is allowed when specified in the assignment.

11. Other University Notices and Policies: Be familiar with the University's official e-mail student notification policy. It is your responsibility to keep the University informed of changes in e-mail address. Students are expected to check Canvas and e-mail on a frequent and regular basis in order to stay current with University-related communications, recognizing that certain communications may be time-critical. (see http://www.utexas.edu/its/help/utmail/1564).

Documented Disability Statement. The University of Texas at Austin provides upon request appropriate academic adjustments for qualified students with disabilities. For more information, contact the Office of the Dean of Students at 471-6259, 471-4241 TDD. Notify the course instructor or TA as quickly as possible if the material being presented in class is not accessible (e.g., instructional videos need captioning, course slides are not readable, etc.).

Behavior Concerns Advice Line (BCAL). If you are worried about someone's behavior, use the Behavior Concerns Advice Line to discuss your concerns. This service is provided through a partnership among the Office of the Dean of Students, the Counseling and Mental Health Center (CMHC), the Employee Assistance Program (EAP), and The University of Texas Police Department (UTPD). Call 512-232-5050 or visit http://www.utexas.edu/safety/bcal.

Religious Holy Days: University policy requires students to notify their instructors as far in advance of the absence as possible so that arrangements can be made. You will be given an opportunity to complete missed work within a reasonable time after the absence.

Drop Policy. Contact the ME department Undergraduate Office about drop policy.