

**Dynamics and Control System Design Laboratory  
EML 4314C All Sections**

**Class Periods:** Monday/Wednesday, 2<sup>nd</sup> period, 8:30am-9:20am

**Lab Periods:** Vary according to section.

**Lecture Location:** WEIL 0270

**Laboratory Location:** NEB 114

**Academic Term:** Fall 2025

**Instructors:**

Jonathan Brooks

[brooks666@ufl.edu](mailto:brooks666@ufl.edu)

Office Hours: NEB 139, time TBA

Shannon Ridgeway

[scer@ufl.edu](mailto:scer@ufl.edu)

Office Hours: Tu/W/Th during open lab times, NEB 114

**Teaching Assistant/Supervised Teaching Student:**

- Will be listed on Canvas

**Course Description**

Experiments on dynamic systems in mechanical and aerospace engineering and design of relevant control systems.

Credits: 3

**Course Pre-Requisites / Co-Requisites**

EML 3301C, EML 4312

**Course Objectives**

This course provides a control system design experience. Students will learn how to apply control system theory and engineering laboratory fundamentals to model and characterize dynamic systems and synthesize single-input/single-output and multiple-input/multiple-output control systems using classical and state-space control methods. During the course, students will design and implement control systems for several mechanical systems. Upon completion of this course, students are expected to understand basic control system design theory, coupled with a strong foundation and appreciation for utilization of experimental techniques in characterizing and controlling mechanical systems. In addition, they will also develop/improve their communication skills to relay their ideas verbally (through group and TA interactions) and in written form (on lab reports).

**Materials and Supply Fees**

See course catalog/UF registrar

**Relation to Program Outcomes (ABET):**

Outcome	Coverage*
1. An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics	High
2. An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors	High
3. An ability to communicate effectively with a range of audiences	Medium
4. An ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts	

5. An ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives	Medium
6. An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions	High
7. An ability to acquire and apply new knowledge as needed, using appropriate learning strategies	

\*Coverage is given as high, medium, or low. An empty box indicates that this outcome is not covered or assessed in the course.

### **Required Textbooks and Software**

- No texts are required for the course – reference material will be provided on the course web site on Canvas
- We will use Matlab and LabVIEW extensively. You can access Matlab through UF Apps, and we will provide a LabVIEW license key to you that is paid for through the course lab fee.

### **Recommended Materials**

- There are many good control system books. For example, the books by Dorf and Bishop, by Ogata, or by Nise (any editions) are great references. Indeed, the book published by MAE Professor Prabir Barooah was created in support of our EML4313/EML4314c course sequence.

### **Required Computer:**

This is discussed on both the department and college websites:

- *HWCOE Computer Requirements:* <https://www.eng.ufl.edu/students/advising/fall-semester-checklist/computer-requirements/>

Note that we are using the 32 bit version of LabVIEW on Windows (runs on Windows 10, 11). Apple computers running Windows **are not supported**, are known to work some of the time, and do not work some of the time. If you chose to attempt an apple computer, TA's cannot generally help.

### **Course Schedule**

The course schedule will be linked on the main page of the course web site on Canvas. Any changes to the dates/times/locations of course-related events will be posted on the main Canvas page for the course.

### **Attendance Policy, Class Expectations, and Make-Up Policy**

- Lectures will be delivered in person or asynchronous. It is the student's responsibility to keep up with lectures. There may be tracking/in-class Canvas quizzes that will cover lecture material, and these will count towards the HW/Quiz component of the course grade.
- Lab sections will be implemented in person / as TA office hours, as posted on Canvas. Attendance is not restricted but preference/priority will be given to students registered in that lab section.

### **Late Report Policy**

- If you do not submit your lab report assignment when it is due, you can still submit it via Canvas for two more days. Unless you have prior written (email is fine) permission to submit a late assignment, the penalties for late submission will be as follows:
  - Late submissions within one hour of the deadline: 3% of your earned grade.
  - Late submissions past one hour but within 24 hours of the deadline: 15% of your earned grade.
  - Late submissions past 24 hours but within 48 hours of the deadline: 50% of your earned grade.
  - Past 48 hours, your assignment will not be graded.
- There will be NO scheduled make-up laboratories. It is the student's responsibility to honor and respect the given deadlines and meeting times. If you have a scheduled professional activity (e.g., a conference) which conflicts with an important course date, please communicate with the instructor as early in the semester as possible to schedule some accommodation.

## Excused absences

- Excused absences must be consistent with university policies in the undergraduate catalog (<https://catalog.ufl.edu/UGRD/academic-regulations/attendance-policies#absencestext>) and require appropriate documentation.

## Evaluation of Grades

Assignment	Total Points	Percentage of Final Grade
Homeworks, quizzes and lab milestones	Varies by assignment	30%
Lab Reports (3)	100 each	50% (16 2/3 % x3)
Final Project Report	100	20%
		100%

## Grading Policy

(Minimum percentage required with no rounding up. E.g., 89.79999 = B+)

Percent	Grade	Grade Points
89.8 - 100	A	4.00
87 - 89.8	B+	3.33
79.8 - 87	B	3.00
77 - 79.8	C+	2.33
69.8 - 77	C	2.00
67 - 69.8	D+	1.33
59.8 - 67	D	1.00
0 - 59.8	E	0.00

## Academic Policies & Resources

See <https://go.ufl.edu/syllabuspolicies> for university wide academic resources and campus resources. Some specifics follow.

## In-Class Recording

Students are allowed to record video or audio of class lectures. However, the purposes for which these recordings may be used are strictly controlled. The only allowable purposes are (1) for personal educational use, (2) in connection with a complaint to the university, or (3) as evidence in, or in preparation for, a criminal or civil proceeding. All other purposes are prohibited. Specifically, students may not publish recorded lectures without the written consent of the instructor.

A “class lecture” is an educational presentation intended to inform or teach enrolled students about a particular subject, including any instructor-led discussions that form part of the presentation, and delivered by any instructor hired or appointed by the University, or by a guest instructor, as part of a University of Florida course. A class lecture does not include lab sessions, student presentations, clinical presentations such as patient history, academic exercises involving solely student participation, assessments (quizzes, tests, exams), field trips, private conversations between students in the class or between a student and the faculty or lecturer during a class session.

Publication without permission of the instructor is prohibited. To “publish” means to share, transmit, circulate, distribute, or provide access to a recording, regardless of format or medium, to another person (or persons),

including but not limited to another student within the same class section. Additionally, a recording, or transcript of a recording, is considered published if it is posted on or uploaded to, in whole or in part, any media platform, including but not limited to social media, book, magazine, newspaper, leaflet, or third party note/tutoring services. A student who publishes a recording without written consent may be subject to a civil cause of action instituted by a person injured by the publication and/or discipline under UF Regulation 4.040 Student Honor Code and Student Conduct Code.

### ***University Honesty Policy***

UF students are bound by The Honor Pledge which states, “We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honor and integrity by abiding by the Honor Code. On all work submitted for credit by students at the University of Florida, the following pledge is either required or implied: “On my honor, I have neither given nor received unauthorized aid in doing this assignment.” The Conduct Code (<https://sccr.dso.ufl.edu/process/student-conduct-code/>) specifies a number of behaviors that are in violation of this code and the possible sanctions. If you have any questions or concerns, please consult with the instructor or TAs in this class.

### ***Commitment to a Positive Learning Environment***

The Herbert Wertheim College of Engineering values varied perspectives and lived experiences within our community and is committed to supporting the University’s core values.

If you feel like your performance in class is being impacted, please contact your instructor or any of the following:

- Your academic advisor or Undergraduate Coordinator
- HWCOE Human Resources, 352-392-0904, [student-support-hr@eng.ufl.edu](mailto:student-support-hr@eng.ufl.edu)
- Pam Dickrell, Associate Dean of Student Affairs, 352-392-2177, [pld@ufl.edu](mailto:pld@ufl.edu)

### ***Student Privacy***

There are federal laws protecting your privacy with regards to grades earned in courses and on individual assignments. For more information, please see: <https://registrar.ufl.edu/ferpa.html>

### **Campus Health and Wellness Resources:**

- **UF Whole Gator Resources:** Visit <https://one.uf.edu/whole-gator/discover> for resources that are designed to help you thrive physically, mentally, and emotionally at UF.

### ***Academic Resources***

- **E-learning technical support:** Contact the [UF Computing Help Desk](#) at [352-392-4357](tel:352-392-4357) or via e-mail at [helpdesk@ufl.edu](mailto:helpdesk@ufl.edu).
- **Career Connections Center:** Reitz Union Suite 1300, [352-392-1601](tel:352-392-1601). Career assistance and counseling services.
- **Library Support:** Various ways to receive assistance with respect to using the libraries or finding resources. Call [866-281-6309](tel:866-281-6309) or email [ask@ufl.libanswers.com](mailto:ask@ufl.libanswers.com) for more information.
- **Academic Resources:** 1317 Turlington Hall, Call [352-392-2010](tel:352-392-2010), or to make a private appointment: [352-392-6420](tel:352-392-6420). Email contact: [teaching-center@ufl.edu](mailto:teaching-center@ufl.edu). General study skills and tutoring.
- **Writing Studio:** Daytime (9:30am-3:30pm): 2215 Turlington Hall, [352-846-1138](tel:352-846-1138) | Evening (5:00pm-7:00pm): 1545 W University Avenue (Library West, Rm. 339). Help brainstorming, formatting, and writing papers.
- **Academic Complaints:** Office of the Ombuds; [Visit the Complaint Portal webpage for more information.](#)
- **Enrollment Management Complaints (Registrar, Financial Aid, Admissions):** [View the Student Complaint Procedure webpage for more information.](#)
- **UF Student Success Initiative:** Visit <https://studentsuccess.ufl.edu/> for resources that support your success as a UF student.