

Elements of Electrical Engineering

EEL3003- Sections 11630, 25639

Class Periods: Asynchronous

Location: Online

Academic Term: Fall 2024

Instructor:

Lilianny Virguez, PhD

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352-294-1384

Office Hours: TBA via Canvas

Teaching Assistant/Peer Mentor/Supervised Teaching Student:

Please contact through the Canvas website

Our course peer mentors/graders will offer online help hours, each session will have virtual assistance for students. All peer mentor sessions are for help with both calculation-based problems and Arduino Build Kit assistance. You can attend any mentor hours for help, not just the one with your grading range.

If you have questions or need help outside of office hours, please use Canvas Discussion Board. This provides the most visibility enabling you to receive answers most efficiently from the peer mentors, instructor, or your fellow students

Course Description

Introduces the theory and practice of electrical engineering for those not majoring in electrical engineering. Discusses circuits, machines, electronics and systems.

Course Pre-Requisites / Co-Requisites

MAC 2313 and PHY 2049

Course Objectives

- 1) Become familiar with common engineering circuit components.
- 2) Understand role of circuits across engineering majors for future multidisciplinary courses or projects.
- 3) Learn techniques to solve open-ended engineering challenges.
- 4) Understand core equations and numerical problem-solving techniques of introductory circuits.
- 5) Connect circuit theory and equations to practice and builds with physical circuits components.

Materials and Supply Fees

\$27.99

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	Medium
3. An ability to communicate effectively with a range of audiences	Low
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	
6. An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions	Low
7. An ability to acquire and apply new knowledge as needed, using appropriate learning strategies	Medium

*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



1.ELEGOO Super Starter Kit:

Each student should purchase their own ELEGOO Super Starter Kit. Half of your course homework assignments and some conceptual questions on the exam will be based on built items using the Arduino Kit. [Amazon link here.](#)

UF student computing requirement: <https://news.it.ufl.edu/education/student-computing-requirements-for-uf/>

2.Laptop with web camera and microphone tested well ahead of each exam: You will need your own laptop to use your Arduino (ELEGOO) Kit as well as take course exams, which are proctored online using Honorlock. Please read the following handout to prepare for an online exam proctored by Honorlock:

<https://secure.ua.ufl.edu/Shared/DistancePrograms/dl-images/honorlock-student-guide.pdf>

3.Calculator: A polar-rectangular mixed mode calculator

Course Schedule

Week 1: [Physics 2 Review Part 1](#)

Week 2: [Physics2 Review Part2, Intro to Arduino](#)

Week 3: [Nodal, Mesh/Loop Analysis](#)

Week 4: [Review for Exam1, Source Transformation](#)

Week 5: [Exam1, Superposition](#)

Week 6: [Thevenin Equivalent Circuits, Maximum Power Transfer](#)

Week 7: [Operational Amplifiers](#)

Week 8: [Capacitors, Inductors Networks](#)

Week 9: [Review for Exam2, Arduino Final Project Info](#)

Week 10: [Exam2](#)

Week 11: [AC Part 1: AC Intro, Complex Numbers, RMS, Transformers](#)

Week 12: [AC Part 2: Phasors, Impedance, Filters, AC Circuit Analysis I](#)

Week 13: [AC Part 3: AC Circuit Analysis II, AC Power](#)

Week 14: [Review for Exam3](#)

Week 15: [Exam3](#)

Important Dates

Friday, September, 20 Exam 1 (Online)

Friday, October, 25 Exam 2 (Online)

Wednesday, December 4 Exam 3 (Online)

Monday, December 9 Arduino Project due

Attendance Policy, Class Expectations, and Make-Up Policy

Requirements for class attendance and make-up exams, assignments, and other work in this course are consistent with university policies. Click here to read the university attendance policies:

<https://catalog.ufl.edu/UGRD/academic-regulations/attendance-policies/>

- You are responsible for the announcements made in class.
- You are expected to watch every video. The videos are an important source of class content and communication channel about exams, grading, policies, and information that can have a profound effect on your outcome.
- In general, there will be NO makeup assignments or exams given. However, a student is permitted to make up a missed assignment without penalty if they have a conflict between an assignment and a scheduled University- approved activity. A student needing a make-up assignment due to schedule conflicts must notify the instructor at least one week before the day the assignment is scheduled for.

Evaluation of Grades

Assignment	Total Points	Percentage of Final Grade
Participation (10)	100 each	3%
Homework (6)	60 (part1) + 40 (part2) each	12%
Arduino Reports (6)	100 each	15%
Exams (3)	20 each	60%
Arduino Project	10	10%
		100%

All exams (exams will be administered online), assignments, and projects are to be completed independently by the individual student unless otherwise explicitly stated. Collaborative study is permitted, but each student must submit their own original work! Any violation of this policy will be considered a violation of the honor code and reported to the office of the Dean of Students (see the section below called University Honesty Policy for more details).

Grading Policy

The following is given as an example only.

Percent	Grade	Grade Points
92 - 100	A	4.00
90.0 - 91.99	A-	3.67
88 - 89.99	B+	3.33
82 - 87.99	B	3.00
80.0 - 81.99	B-	2.67
78 - 79.99	C+	2.33
72 - 77.99	C	2.00
70.0 - 71.99	C-	1.67
68 - 69.99	D+	1.33
62 - 67.9	D	1.00
60.0 - 61.9	D-	0.67

0 - 59.9	E	0.00
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More information on UF grading policy may be found at:

<https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx>

Students Requiring Accommodations

Students with disabilities who experience learning barriers and would like to request academic accommodations should connect with the disability Resource Center by visiting <https://disability.ufl.edu/students/get-started/>. It is important for students to share their accommodation letter with their instructor and discuss their access needs, as early as possible in the semester.

Course Evaluation

Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via GatorEvals. Guidance on how to give feedback in a professional and respectful manner is available at <https://gatorevals.aa.ufl.edu/students/>. Students will be notified when the evaluation period opens, and can complete evaluations through the email they receive from GatorEvals, in their Canvas course menu under GatorEvals, or via <https://ufl.bluer.com/ufl/>. Summaries of course evaluation results are available to students at <https://gatorevals.aa.ufl.edu/public-results/>.

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 Honor 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. Furthermore, you are obligated to report any condition that facilitates academic misconduct to appropriate personnel. If you have any questions or concerns, please consult with the instructor or TAs in this class.

Commitment to a Safe and Inclusive 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, including the elimination of discrimination. It is expected that every person in this class will treat one another with dignity and respect regardless of race, creed, color, religion, age, disability, sex, sexual orientation, gender identity and expression, marital status, national origin, political opinions or affiliations, genetic information, and veteran status.

If you feel like your performance in class is being impacted by discrimination or harassment of any kind, 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
- Pam Dickrell, Associate Dean of Student Affairs, 352-392-2177, pld@ufl.edu
- Toshikazu Nishida, Associate Dean of Academic Affairs, 352-392-0943, nishida@eng.ufl.edu

Software Use

All faculty, staff, and students of the University are required and expected to obey the laws and legal agreements governing software use. Failure to do so can lead to monetary damages and/or criminal penalties for the individual violator. Because such violations are also against University policies and rules, disciplinary action will be taken as appropriate. We, the members of the University of Florida community, pledge to uphold ourselves and our peers to the highest standards of honesty and integrity.

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 Resources:

Health and Wellness

U Matter, We Care:

Your well-being is important to the University of Florida. The U Matter, We Care initiative is committed to creating a culture of care on our campus by encouraging members of our community to look out for one another and to reach out for help if a member of our community is in need. If you or a friend is in distress, please contact umatter@ufl.edu so that the U Matter, We Care Team can reach out to the student in distress. A nighttime and weekend crisis counselor is available by phone at 352-392-1575. The U Matter, We Care Team can help connect students to the many other helping resources available including, but not limited to, Victim Advocates, Housing staff, and the Counseling and Wellness Center. Please remember that asking for help is a sign of strength. In case of emergency, call 9-1-1.

Counseling and Wellness Center: <https://counseling.ufl.edu>, and 392-1575; and the University Police Department: 392-1111 or 9-1-1 for emergencies.

Sexual Discrimination, Harassment, Assault, or Violence

If you or a friend has been subjected to sexual discrimination, sexual harassment, sexual assault, or violence contact the **Office of Title IX Compliance**, located at Yon Hall Room 427, 1908 Stadium Road, (352) 273-1094, title-ix@ufl.edu

Sexual Assault Recovery Services (SARS)

Student Health Care Center, 392-1161.

University Police Department at 392-1111 (or 9-1-1 for emergencies), or <http://www.police.ufl.edu/>.

Academic Resources

E-learning technical support, 352-392-4357 (select option 2) or e-mail to Learning-support@ufl.edu.
<https://elearning.ufl.edu/>.

Career Connections Center, Reitz Union, 392-1601. Career assistance and counseling; <https://career.ufl.edu>.

Library Support, <http://cms.uflib.ufl.edu/ask>. Various ways to receive assistance with respect to using the libraries or finding resources.

Teaching Center, Broward Hall, 392-2010 or 392-6420. General study skills and tutoring.
<https://teachingcenter.ufl.edu/>.

Writing Studio, 302 Tigert Hall, 846-1138. Help brainstorming, formatting, and writing papers.
<https://writing.ufl.edu/writing-studio/>.

Student Complaints Campus: <https://sccr.dso.ufl.edu/policies/student-honor-code-student-conduct-code/>; <https://care.dso.ufl.edu>.

On-Line Students Complaints: <https://distance.ufl.edu/getting-help/>; <https://distance.ufl.edu/state-authorization-status/#student-complaint>.