Elements of Electrical Engineering
EEL 3003 - Sections 11787, 11788, 11789, 19493, 23088
Class Periods: T 7-8 (11789), W 3-4 (11788), W 7-8 (19493), R 3-4 (11787), Web (23088)
Location: All sections except for 23088 will meet synchronously during the specified class periods throughout the semester

Academic Term: Spring 2022

Instructor:

- Andrea Goncher, PhD (11787) andreagoncher@ufl.edu, 352-294-6884
- Gloria J. Kim, PhD (11789, 11788, 19493) gloriakim@ufl.edu, 352-392-9054
- Lilianny Virgüez, PhD (23088) lilianny.virguez@ufl.edu, 352-294-1384

Office Hours: TBA via Canvas

Teaching Assistant/Peer Mentor/Supervised Teaching Student (23088 only)
- Contact information will be provided 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
$42.99 (23088), $15 (11787, 11788, 11789, 19493)

Relation to Program Outcomes (ABET):

Outcome	**Coverage***
1. An ability to identify, formulate, and solve engineering problems by applying principles of engineering, science, and mathematics.	High
2. An ability to apply both analysis and synthesis in the engineering design process, resulting in designs that meet desired needs.	Medium

3. An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions.	Low
4. An ability to communicate effectively with a range of audiences	Low
5. 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.	
6. An ability to recognize the ongoing need for additional knowledge and locate, evaluate, integrate, and apply this knowledge appropriately.	
7. An ability to function effectively on teams that establish goals, plan tasks, meet deadlines, and analyze risk and uncertainty	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. **Arduino Starter Kit - English Official Kit With 170 Page Book:** Each student should purchase their own Arduino 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. **Delayed shipping will not be accepted as an excuse for missing the first build assignment deadline of January 19.**
   Order ASAP
   from Arduino.cc: https://store.arduino.cc/usa/arduino-starter-kit
   OR
   from Amazon (fast shipping if you have Amazon Prime): https://www.amazon.com/Arduino-Starter-Kit-EnglishOfficial/dp/B009UKZV0A/ref=sr_1_3?s=electronics&ie=UTF8&qid=1525786729&sr=1-%203&keywords=arduino+starter+kit&dpID=414essH-EwL&preST=_SX300_QL70_&dpSrc=srch
2. **Laptop with web camera and microphone** tested well ahead of each exam: You will need your own laptop to use your Arduino 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://dce.ufl.edu/media/dceufledu/pdfs/Honorlock-Student-Exam-Preparation-Information.pdf
3. **Calculator:** A polar-rectangular mixed mode calculator

Course Schedule

Week	Week starting on	
1	Jan 3	Physics2 Review: Building Terminology, Tellegen's Theorem, Current Division & Resistance, Resistors, KCL - KVL
2	Jan 10	Physics2 Review: Series & Voltage Division, Parallel & Current Division, Multiple Sources or Resistors in Parallel Intro to Arduino

3	Jan 17	Nodal, Mesh/Loop Analysis, Source Transformation, Wheatstone Bridge
4	Jan 24	Review for Exam1
5	Jan 31	Exam1, Electric Motors, Superposition
6	Feb 7	Thevenin Equivalent Circuits, Maximum Power Transfer
7	Feb 14	Operational Amplifiers I
8	Feb 21	Operational Amplifiers II
9	Feb 28	Review for Exam2, Capacitors, Inductors
10	Mar 7	SPRING BREAK
11	Mar 14	Exam2, AC Part 1: AC Intro, Complex Numbers, RMS, Transformers
12	Mar 21	AC Part 2: Phasors, Impedance, Filters, AC Circuit Analysis I
13	Mar 28	AC Part 3: AC Circuit Analysis II, AC Power
14	Apr 4	Review for Exam3
15	Apr 11	Exam3
16	Apr 18	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 he/she/they has/have a conflict between an assignment and a scheduled University- approved activity (please do not ask for a make-up exam to attend a job interview). 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. Excused absences are consistent with university policies in the undergraduate catalog (https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx) and require appropriate documentation. You are expected to be present without exception and to plan any travel around these dates accordingly.
- Assignment or exams for other courses, employment interviews, employer events, weddings, vacations, etc. are NOT excused absences.
- If you ever have any questions about exams, grades, or policies, contact the instructor for answers. The instructor determines your final grade and sets the policies, not your classmates. Many student grades have needlessly suffered because of misinformation. Go to the source!

Evaluation of Grades:

Assignment	Total Points	Percentage of Final Grade
Participation (10)	100 each	3%
Homework (6)	60 (part 1) +40 (part 2) each	12%
Arduino Reports (6)	100 each	15%
Exams (3)	100 each	60%
Arduino Project	100	10%
Total		100% + discussion board bonus 2%

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 Scale:

Overall Score	***Grade***	***Grade Points***
92% and above	A	4.00
90 - 91.99%	A-	3.67
88 - 89.99%	B+	3.33
82 - 87.99%	B	3.00
80 - 81.99%	B-	2.67
78 - 79.99%	C+	2.33
72 - 77.99%	C	2.00
70 - 71.99%	C-	1.67
68 - 69.99%	D+	1.33
62 - 67.99%	D	1.00
60 - 61.99%	D-	0.67
<59.99%	E	0.00

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.bluera.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 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 Safe and Inclusive Learning Environment
The Herbert Wertheim College of Engineering values broad diversity within our community and is committed to individual and group empowerment, inclusion, and the elimination of discrimination. It is expected that every person in this class will treat one another with dignity and respect regardless of gender, sexuality, disability, age, socioeconomic status, ethnicity, race, and culture.

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 Graduate Program Coordinator
- Jennifer Nappo, Director of Human Resources, 352-392-0904, jpennacc@ufl.edu
- Curtis Taylor, Associate Dean of Student Affairs, 352-392-2177, taylor@eng.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

Covid-19 Protocols:

- You are expected to wear approved face coverings at all times during class and within buildings even if you are vaccinated. Please continue to follow healthy habits, including best practices like frequent hand washing. Following these practices is our responsibility as Gators.

- If you are sick, stay home and self-quarantine. Please visit the UF Health Screen, Test & Protect website about next steps, retake the questionnaire and schedule your test for no sooner than 24 hours after your symptoms began. Please call your primary care provider if you are ill and need immediate care or the UF Student Health Care Center at 352-392-1161 (or email covid@shcc.ufl.edu) to be evaluated for testing and to receive further instructions about returning to campus. UF Health Screen, Test & Protect offers guidance when you are sick, have been exposed to someone who has tested positive or have tested positive yourself. Visit the UF Health Screen, Test & Protect website for more information.

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 suppor*t*, 352-392-4357 (select option 2) or e-mail to Learning-support@ufl.edu. https://lss.at.ufl.edu/help.shtml.

Career Resource 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*:* http://www.distance.ufl.edu/student-complaint-process.