EEL3003 Elements of Electrical Engineering
Class Periods (Sections): T 3-4 (12146 & 26199), T 6-7 (21226 & 26201), T 9-10 (12145 & 26198), W 3-4 (12144 & 26213), R 3-4 (25714 & 26214), F 4-5 (25717 & 26218)
Locations: All sections meet **synchronously** during the specified class periods in the assigned classrooms and online.
Academic Term: Spring 2021

Instructor:
- Andrea Goncher, PhD (F) andreagoncher@ufl.edu, 352-294-6884
- Gloria J. Kim, PhD (T) gloriakim@ufl.edu, 352-392-9054
- Lilianny Virgüez, PhD (W & R) lilianny.virguez@ufl.edu, 352-294-1384

Office Hours: TBA by January 18, 2020

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
None

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. **<u>Delayed shipping will not be accepted as an excuse for missing the first build assignment deadline of Feb 1.</u>**
   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: You will need your own laptop to participate in class and use your Arduino Kit.
3. **Calculator:** A polar-rectangular mixed mode calculator

Course Schedule

Week	Week starting on	
1	Jan 11	Physics2 Review: Building Terminology, Tellegen's Theorem, Current Division & Resistance, Resistors, KCL - KVL
2	Jan 18	Physics2 Review: Series & Voltage Division, Parallel & Current Division, Multiple Sources or Resistors in Parallel
3	Jan 25	Nodal, Mesh, Loop Analysis, Wheatstone Bridge
4	Feb 1	Review for Exam1
5	Feb 8	Exam1, Electric Motors
6	Feb 15	Source transformation, Superposition, Thevenin/Norton Equivalent Circuits
7	Feb 22	Norton Equivalent Circuits, Operational Amplifiers I
8	Mar 1	Operational Amplifiers II

9	Mar 8	Review for Exam2, Capacitors, Inductors
10	Mar 15	Exam2, AC Part 1: AC Intro, Complex Numbers, RMS, Transformers
11	Mar 22	AC Part 2: Phasors, Impedance, Filters, AC Circuit Analysis I
12	Mar 29	AC Part 3: AC Circuit Analysis II, AC Power
13	Apr 5	Review for Exam3
14	Apr 12	Exam3
15	Apr 19	Project Due on April 26 (Mon)

Online Course Recording

Our class sessions <u>may be</u> audio visually recorded for students in the class to refer back and for enrolled students who are unable to attend live. Students who participate with their camera engaged or utilize a profile image are agreeing to have their video or image recorded. If you are unwilling to consent to have your profile or video image recorded, be sure to keep your camera off and do not use a profile image. Likewise, students who un-mute during class and participate orally are agreeing to have their voices recorded. If you are not willing to consent to have your voice recorded during class, you will need to keep your mute button activated and communicate exclusively using the "chat" feature, which allows students to type questions and comments live. The chat will not be recorded or shared. As in all courses, unauthorized recording and unauthorized sharing of recorded materials is prohibited.

Attendance Policy, Class Expectations, and Make-Up Policy

- **Attendance in weekly synchronous meetings is required** unless there is a university approved reason for absence. **Each student is permitted to miss one weekly sessions during the semester without grade penalty.** Each additional unexcused absence will result in deduction from the participation grade that accounts for a portion of your grade. Three (3) unexcused absences will wipe out the participation grade.
- Excused absences must be 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 watch **every** video **before** the weekly synchronous class meetings. 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.
- **Treat this course as you would any engineering course. It is three credits and not trivial. You should expect to spend nine (9) hours a week on this course.**
- 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 the peer mentors/graders or your classmates.

Evaluation of Grades

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

Grading Policy

Percent	Grade	Grade Points
92 – 100	A	4.00
90 – 91.9	A-	3.67
88 – 89.9	B+	3.33
82 – 87.9	B	3.00
80 – 81.9	B-	2.67
78 – 79.9	C+	2.33
72 – 77.9	C	2.00
70 – 71.9	C-	1.67
68 – 69.9	D+	1.33
62 – 67.9	D	1.00
60 – 61.9	D-	0.67
<60	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/.

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/policies/student-honor-code-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 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
• Robin Bielling, Director of Human Resources, 352-392-0903, rbielling@eng.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

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: http://www.counseling.ufl.edu/cwc, 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/.

E-learning technical support, 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://www.crc.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://care.dso.ufl.edu.

On-Line Students Complaints: http://www.distance.ufl.edu/student-complaint-process.