

Syllabus: EEL 3111C – Circuits 1 Fall 2020

Credits: 4

Meeting Times: MWF 2nd period (8:30 a.m. -9:20 a.m.) NEB 202

Instructor: Allen E. Turner 227 NEB turneral@ufl.edu 352-392-2652

Office Hours: MW 1:00-2:00, or by appointment

TA/Lab: TBD

General Description: Material will include; Circuit Variables, Circuit Elements, Simple Resistive Circuits, Techniques of Circuit Analysis, The Operational Amplifier, Inductance, Capacitance, Response of First-Order RL and RC Circuits, The Natural and Step RLC response, Sinusoidal Steady-State Circuit analysis, Sinusoidal Steady State Power, and Frequency Selective Circuits.

Objectives: To build new concepts and ideas on concepts presented. Develop an understanding of the explicit connections among the many circuit analysis tools and methods. Develop problem-solving skills that rely on a solid conceptual foundation. Develop different approaches to solving a problem before writing a single equation. To introduce realistic engineering experiences at every opportunity. Develop the insights of a practicing engineer. Engage in life-long learning. After successful completion of this course, the student will have a basic understanding of:

- SI Units, Passive Sign Convention, Ohm's Law, KVL, KCL Week 1-2
- Series, Parallel, Voltage and Current Division, D-Wye, Nodal, and Mesh Week 3-4
- Source Transform, Thévenin and Norton, Superposition, Real Circuit Examples Week 5-6
- Operational Amplifiers, Capacitor, Inductor, The Natural and Step Response Week 7-8
- Step and Switched Response Week 9-10
- Parallel RLC, Stepped, Natural and Damped Response Week 11-12
- Sinusoidal Response, Phasors, and Source Transforms in the Frequency Domain Week 13-14
- Power, RMS and Complex, Frequency Selective Circuits Week 14-15

Required Text: ELECTRIC CIRCUITS, NILSSON & RIEDEL 11th ed. (11E (VitalSource E-Book)) ISBN 978-01-347472-24

REQUIRED VitalSource E-Book purchase instructions appear later in this syllabus.

Calculator: A TI 89 Titanium or newer polar-rectangular mixed mode calculator will be required.

Grading: There will be three tests, a final, Laboratory and homework. Homework turned in late will not be given credit.

For those taking the Pearson Adaptive Follow-up Problems they will be worth up to 10% extra credit on the Homework Problems.

Test/Exam: A Formula sheet will be provided on Tests/Exam.

Test	Tentative Dates	Tentative Chapters
1	September 25 th	1-4
2	October 23 rd	5-7
3	November 20 th	8,9, 1 st half of 10
Final	December 17 th , 7:30-9:30 am	1-11, Portion of 14

An overall test score, T , between 0 and 100, will be calculated for each student as shown below.

$$T = 0.20T_L + 0.25T_M + 0.25T_H + 0.30F$$

Where T_L , T_M , T_H are the Lowest, Medium and Highest test scores for each student and F is the final exam score.

Option 1: Optional or No Attendance Quizzes*

The score, S , for the course will be determined by combining the average scores, out of 100, Homework, H , Labs, L , and Tests, T , with $S = hH + lL + tT$ where h , l and t are determined as follows.

If $H > T$ then $h=0.10$	Otherwise $h=0.10+(T-H)*0.003$	Maximum $h=0.2$
If $L > T$ then $l=0.20$	Otherwise $l=0.20+(T-L)*0.003$	Maximum $l=0.4$
$t=1-h-l$		

Option 2: Daily Attendance Quizzes

The score, S , for the course will be determined by combining the average scores, out of 100, Homework, H , Labs, L , Daily Attendance Quizzes, Q , and Tests, T , with $S = hH + lL + qQ + tT$ where h , l , q and t are determined as follows.

If $H > T$ then $h=0.10$	Otherwise $h=0.10+(T-H)*0.003$	Maximum $h=0.2$
If $L > T$ then $l=0.20$	Otherwise $l=0.20+(T-L)*0.003$	Maximum $l=0.4$
If $Q > T$ then $q=0.05$	Otherwise $q=0.05+(T-Q)*0.003$	Maximum $q=0.2$
$t=1-h-l-q$		

******* WARNING: Canvas Posted Scores (S) Do Not Reflect the Actual Score (S). *******

Grades will be assigned based on the table shown below.

Overall Score	Grade
92.5-100	A
90-92.499...	A-
87.5-89.99...	B+
82.5-87.499...	B
80-82.499..	B-
77.5-79.99...	C+
72.5-77.499..	C
70-72.499..	C-
67.5-69.99..	D+
62.5-67.499..	D
60-62.499..	D-
Less than 60	E

The order of operations to get registered for access:

1) Students will want to opt in to purchasing their UF All Access VitalSource eText using the registration handout below, retail of \$99.36. If you have opted in to the UF All Access program to gain access to an eText, there is a discounted print upgrade available at the UF Bookstore in the Union available to purchase for \$37.50. This will be kept behind the counter, and opt-in status will need to be confirmed.

2) Pearson will provide complimentary access to MasteringEngineering WITHOUT eText (since they access their ebook via VitalSource) to —The Pearson representative will walk you through this in class.

EEL3111C – Circuits 1 Laboratory

Lab:

Labs start at the third week of class and your section time will be determined by the end of the first week through an on-line survey. All labs take place in NEB 250 and lab instructor office hour times and locations can be found on the course's canvas page.

The laboratory portion of the course is made up of nine labs and a final project. Each lab has a pre-lab, pre-lab quiz, in-lab portion, and a write up. Labs occur every week until the end of the semester, see the lab schedule (subject to change) in the lab rules and policies.

All labs have a strict attendance, submission, and completion policy:

- Failure to complete the pre-lab submission, pre-lab quiz, and in-lab demonstration on time, will result in a zero for the entire lab.
- Arriving more than 5 minutes late to the start of lab will result in the student being barred from completing the lab and receiving a zero for the entire lab.
- Failure to submit write ups on time will also result in a zero for a given write up, but not the entire lab. No late work is accepted.

Making up labs is on a case by case basis and are generally only offered for reasonable excuses. The following are not reasonable excuses:

- Missing the lab time because of confusion between period numbers and period times.
- Arriving late to lab because of confusion about the start time.
- Skipping lab to attend a review session or study for a test.

Course Evaluation: Students are expected to provide feedback on the quality of instruction in this course by completing online evaluations at <https://evaluations.ufl.edu/evals>. Evaluations are typically open during the last two or three weeks of the semester, but students will be given specific times when they are open. Summary results of these assessments are available to students at <https://evaluations.ufl.edu/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://www.dso.ufl.edu/%20sccr/process/student-conduct-honor-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.

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.

Students Requiring Accommodations: Students with disabilities requesting accommodations should first register with the Disability Resource Center (352-392-8565, <https://www.dso.ufl.edu/drc>) by providing appropriate documentation. Once registered, students will receive an accommodation letter which must be presented to the instructor when requesting accommodation. Students with disabilities should follow this procedure as early as possible in the semester.

UF Grading Policy: Details may be found at <https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx>

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: <http://registrar.ufl.edu/catalog0910/policies/regulationferpa.html>

Campus Resources:

Health and Wellness

U Matter, We Care: If you or a friend is in distress, please contact umatter@ufl.edu or 352 392-1575 so that a team member can reach out to the student.

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 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/](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://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/writingstudio/>.

Student Complaints Campus: https://www.dso.ufl.edu/documents/UF_Complaints_policy.pdf.

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

Absences: Students are responsible for satisfying all academic objectives as defined by the instructor. Absences count from the first class meeting. In general, acceptable reasons for absence from or failure to participate in class include illness, serious family emergencies, special curricular requirements (e.g., judging trips, field trips, professional conferences), military obligation, severe weather conditions, religious holidays, and participation in official university activities such as music performances, athletic competition or debate. Absences from class for court-imposed legal obligations (e.g., jury duty or subpoena) must be excused. Other reasons also may be approved. Students shall be permitted a reasonable amount of time to make up the material or activities covered in their absence. Students cannot participate in classes unless they are registered officially or approved to audit with evidence of having paid audit fees. The Office of the University Registrar provides official class rolls to instructors. If a student does not participate in at least one of the first two class meetings of a course or laboratory in which they are registered, and he or she has not contacted the department to indicate his or her intent, the student can be dropped from the course. Students must not assume that they will be dropped, however. The department will notify students if they have been dropped from a course or laboratory. The university recognizes the right of the individual professor to make attendance mandatory. After due warning, professors can prohibit further attendance and subsequently assign a failing grade for excessive absences.

Religious Holidays: At the University of Florida, students and faculty work together to allow students the opportunity to observe the holy days of his or her faith. A student should inform the faculty member of the religious observances of his or her faith that will conflict with class attendance, with tests or examinations, or with other class activities prior to the class or occurrence of that test or activity. The faculty member is then obligated to accommodate that particular student's religious observances. Because students represent a myriad of cultures and many faiths, the University of Florida is not able to assure that scheduled academic activities do not conflict with the holy days of all religious groups. Accordingly, individual students should make their need for an excused absence known in advance of the scheduled activities. The Florida Board of Education and state law govern university policy regarding observance of religious holidays.

The following guidelines apply:

- Students, upon prior notification to their instructors, shall be excused from class or other scheduled academic activity to observe a religious holy day of their faith.
- Students shall be permitted a reasonable amount of time to make up the material or activities covered in their absence.
- Students shall not be penalized due to absence from class or other scheduled academic activity because of religious observances.

If a faculty member is informed of or is aware that a significant number of students are likely to be absent from class because of a religious observance, the faculty member should not schedule a major exam or other academic event at that time.

A student who is to be excused from class for a religious observance is not required to provide a second party certification of the reason for the absence. Furthermore, a student who believes that he or she has been unreasonably denied an education benefit due to religious beliefs or practices may seek redress through the student grievance procedure.

Illness Policy: If a student is absent from classes or examinations because of illness, she or he should contact their instructors. Students should contact their college by the deadline to drop a course for medical reasons. Students can petition the Dean of Students Office to drop a course for medical reasons. The university's policy regarding medical excuse from classes is maintained by the Student Health Care Center. Students shall be permitted a reasonable amount of time to make up the material or activities covered in their absence.

Twelve-Day Rule: Students who participate in athletic or extracurricular activities are permitted to be absent 12 scholastic days per semester without penalty. (A scholastic day is any day on which regular class work is scheduled.) Instructors must be flexible when scheduling exams or other class assignments. The 12-day rule applies to individual students participating on athletic or scholastic teams. Consequently, a group's schedule that requires absence of more than 12 days should be adjusted so that no student is absent from campus more than 12 scholastic days. If a student previously has been warned about absences or unsatisfactory work, he or she should not incur additional absences, even if he or she has not been absent 12 scholastic days. It is the student's responsibility to maintain satisfactory academic performance and attendance.