

EEE3308C Electronic Circuits
Syllabus Summer C 2019 Rev. 2

				Lecture Topic	Text
May	M	13	1	Intro; LTSpice	Ch. 1
May	W	15	2	Amplifiers intro, design-oriented analysis	Ch. 1
May	F	17	3	Voltage/current dividers, cascade amps	Ch. 2
May	M	20	4	Op amps	Ch. 2
May	W	22	5	Op amp applications	Ch. 2
May	F	24	6	Op amp non-idealities	Ch. 2
May	M	27		Memorial Day: no class	
May	W	29	7	Difference/instrumentation amps	Ch. 2
May	F	31	8	AC coupling	Ch. 2
Jun	M	3	9	Choosing capacitors, port resistances	Ch. 2
Jun	W	5	10	Review for Test 1	Ch. 2
Jun	F	7		Test 1	
Jun	M	10	11	NMOS FET regions of operation	Ch. 5
Jun	W	12	12	MOSFET amplifier	Ch. 5
Jun	F	14	13	More FET amplifiers	Ch. 7

Jun	M	17	14	Other FET types, PMOS	Ch. 7
Jun	W	19	15	Coupling, bypass cap design, more small-sig	Ch. 7
Jun	F	21	16	Degeneration, source follower	Ch. 7
Jun	M-F	22-30		Summer break	
Jul	M	1	17	Other FET types, PMOS	Ch. 7
Jul	W	3	18	PMOS regions of operation	Ch. 7
Jul	F	5	19	NMOS/PMOS amps	
Jul	M	8	20	Multi-stage amplifier design example	Ch. 8
Jul	W	10	21	Current mirror; active load	Ch. 8
Jul	F	12		Test 2	
Jul	M	15	22	Diff pair	Ch. 8
Jul	W	17	23	Diff pair	Ch. 8
Jul	F	19	24	Op amp internal circuits	Ch. 8
Jul	M	22	25	Op amp internal circuits	Ch. 8
Jul	W	24	26	Logic: NAND, NOR	Ch. 14
Jul	F	26	26	Logic: Transmission gate	Ch. 14
Jul	M	29	27	Comparators, Schmitt trigger	Ch. 18
Jul	W	31	28	Relaxation oscillator	Ch. 18

Jul	F	2	29	Diode, BJT large-signal	Ch. 4
Aug	M	5	30	BJT small-signal	Ch. 4
Aug	W	7	31	BJT small-signal	Ch. 4
Aug	F	9		Test 3	

EEE3308C Electronic Circuits

Summer C 2019

Description: Fundamentals of electronic circuits and systems. Lab.

Prerequisites: EEL 3008 Physics of EE, EEL 3112 Circuits 2

Class times: MWF 4th period (12:30 – 1:35 PM)

Room: LAR 239

Professor: Robert Fox (fox@ece.ufl.edu)

Lab Assistants:

Andres Inchausti (AndresInchausti@ufl.edu)

Paul Luckey (pluckey@ufl.edu)

Supervised Teaching Grad Asst:

Marino Guzman (mguzman@ufl.edu)

Course Organization: Each major topic will include homework assignments and labs emphasizing practical applications. There will be three in-class tests. No final exam.

Textbook: A. Sedra and K. Smith, *Microelectronic Circuits*, 7th Ed. (Note: 6th Edition may be usable but 7th is preferred.) **YOU NEED A TEXTBOOK!**

Diligent Analog Discovery Board: Required. Versions 1 or 2 are OK. Works with PC or Mac.

Grading:

HW: 14% (drop lowest one)

Labs, projects: 14%

Tests (3 @24% each): 72%

Course Themes:

- Practical electronics: How do you create circuits to do useful things?

- Basic electronic elements
- Design-oriented analysis

Lab Location and Times:

Room: NEB 211

- 5 laboratories as assigned (about 2 weeks/lab)

72A6 Monday	E1 – E2	(7:00 – 9:45)	TA: Paul
72BA Tuesday	6 – 7	(3:30 – 6:15)	TA: Andres
72B1 Wednesday	6 – 7	(3:30 – 6:15)	TA: Andres
72A9 Thursday	E1 – E2	(7:00 – 9:45)	TA: Paul

TA office hours: TBD

Homework: ~ 1 or 2 per week

- Usually due 1 or 2 classes after they're assigned; solutions are then discussed in class
- Goals are to illustrate and reinforce lecture topics and to provide practice for tests
- Lowest score will be dropped

Class Meetings:

Class Participation: You will not succeed if you regularly skip class. I will note who attends, who participates, who comes to my office or to see the lab instructors (UPIs = Undergrad Peer Instructors), and who plays an active role in labs and projects, and will use this to determine any close calls in determining grade cutoffs.

- If you need to miss class, be sure to see me or a UPI to find out what you missed.
- Attendance at labs is required. Work out any conflicts with the lab UPI in advance if possible and/or arrange makeups.

Handouts: I put as much as possible in the notes, but the lectures usually cover more.

Textbook: We will follow the book closely. Anything in an assigned chapter of the book is fair game unless I specifically tell you otherwise.

Problems: Work as many as you can find, this is the best possible test preparation.

Supplementary problems: Sometimes we can help find more; try assigning yourself design problems and look at other books.

SPICE Assignments:

- Download from <http://www.linear.com/designtools/software/> (Links to an external site.)
[Links to an external site.](#)

- To help debugging SPICE runs, we'll need print-outs of input and output files, a schematic with labeled node numbers, OP (Bias Point Detail) information, OPTIONS, .MODELS, etc.

Labs:

Your lab experience in 3308C should be very similar to your experience 3701.

1. Before walking into your lab section you will be expected to:
 1. Understand the lab manual
 2. Analyze and build the circuits
 3. Perform most measurements at home with your Analog Discovery board
 4. Submit your pre-lab document on Canvas 15 min before your lab section
2. You must demonstrate your working circuit by the end of your lab section
3. A **Lab Experiment Sheet** will be provided on Canvas for each lab
 1. The lab experiment sheet will act as your lab report
 2. You must submit your lab experiment sheet before your next lab section
4. Failure to do any of these will negatively affect your lab score
5. **Lab Manuals** and **Pre-Lab documents** will be accessible before your lab date
6. There will be office hours to answer questions and help you get your lab working

Lab Make-ups: Make-ups must be coordinated in advance if possible.

In order to give enough time to get the lab work done on time, we have time to do only five labs this summer. The details of what those labs haven't been finalized yet.

Academic Honesty Policy:

You are not allowed to cheat or to tolerate cheating. The University's honesty policy, which I follow, can be found at <https://sccr.dso.ufl.edu/wp-content/uploads/sites/4/2018/08/The-Orange-Book-Web.pdf> ([Links to an external site.](#))[Links to an external site.](#).

You may consult with other students on homeworks or projects. However, solutions or reports that you turn in must be **your work alone**. For example, you must create your own computer files and run your own simulations.

- You are expected to do your own work.
- You are expected to report any violations of the Honor Code that you become aware of.
- It is a violation of the Honor Code to turn in solutions to homeworks, labs or tests copied from other students or from published handouts or solutions.
- You are welcome to work with other students on homeworks and lab reports. However, once you understand the method of solution you should work through the calculations yourself.

How to study for this course:

The best way to learn how to analyze circuits and to prepare for tests is to *practice*. There are at least two sets of skills that you must master. One is figuring out how to approach an unfamiliar circuit or problem; the other is how to work through the solution to the problem or the analysis. If you always get help with setting up the problem, or just watch someone else solve the problem, you do not get any practice at all. To learn this material and to do well in the course, you must work problems and analyze circuits by yourself.

Disabilities Accommodations:

Students requesting classroom accommodation must first register with the Dean of Students Office. The Dean of Students Office will provide documentation to the student who must then provide this documentation to the Instructor when requesting accommodation.

UF Religious Holiday Policy:

“Students, upon prior notification of their instructors, shall be excused from class or other scheduled academic activity to observe a religious holy day of their faith. No major test, major class events or major university activity should be scheduled on a major religious holiday. Professors and university administration shall not penalize students who are absent from academic or social activities because of religious observance. Students shall be permitted a reasonable amount of time to make up material or activities covered in their absence.”

To excuse religious holidays, students need to give the instructor a 1 week notice prior to the specific holiday.

UF Counseling Services:

Resources are available on-campus for students having personal problems or lacking clear career and academic goals. Resources include:

- University Counseling Center, 301 Peabody Hall, 392-1575, Personal and Career Counseling.
- SHCC Mental Health, Student Health Care Center, 392-1171, Personal and Counseling.
- Center for Sexual Assault/Abuse Recovery and Education (CARE), Student Health Care Center, 392-1161, sexual assault counseling.
- Career Resource Center, Reitz Union, 392-1601, career development assistance and counseling.

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. “

Make-Up Opportunities:

It is very hard for me to make you a customized exam. If you have a University-approved excuse and arrange for it in advance, or in an emergency, a make-up exam