

**EEE3308C Electronic Circuits
Syllabus Summer C 2022 Rev. 1**

			Lecture	Topic	Text	Lab
May	M	9	1	Intro; LTSpice	Ch. 1	
May	W	11	2	Amplifiers intro, design-oriented analysis	Ch. 1	
May	F	13	3	Voltage/current dividers, cascade amps	Ch. 2	
May	M	16	4	Op amps	Ch. 2	1
May	W	18	5	Op amp applications	Ch. 2	1
May	F	20	6	Op amp non-idealities	Ch. 2	1
May	M	23	7	Difference/instrumentation amps	Ch. 2	2
May	W	25	8	AC coupling	Ch. 2	2
May	F	27	9	Choosing capacitors, port resistances	Ch. 2	2
May	M	30		Memorial Day: no class		
Jun	W	1	10	Review for Test 1	Ch. 2	
Jun	F	3		Test 1	Ch. 2	
Jun	M	6	11	NMOS FET regions of operation	Ch. 5	3
Jun	W	8	12	MOSFET amplifier	Ch. 5	3
Jun	F	10	13	More FET amplifiers	Ch. 7	3
Jun	M	13	14	Other FET types, PMOS	Ch. 7	4
Jun	W	15	15	Coupling, bypass caps, more small-signal	Ch. 7	4
Jun	F	17	16	Degeneration, source follower	Ch. 7	4
Jun	M-F	6/20-6/20		Summer Break		
Jun	M	27	17	Other FET types, PMOS	Ch. 7	5
Jun	W	29	18	PMOS regions of operation	Ch. 7	5
Jul	F	1	19	NMOS/PMOS amps		5
Jul	M	4		Independence Day: no class		
Jul	W	6	20	Multi-stage amplifier design example	Ch. 8	
Jul	F	8		Test 2		
Jul	M	11	21	Current mirror; active load	Ch. 8	Spice
Jul	W	13	22	Diff pair	Ch. 8	Spice
Jul	F	15	23	Op amp internal circuits	Ch. 8	Spice
Jul	M	18	24	Logic: Inverters	Ch. 14	6
Jul	W	20	25	Logic: NAND, NOR, delay	Ch. 14	6
Jul	F	22	26	Logic: Transmission gate	Ch. 14	6
Aug	M	25	27	Diodes		7
Aug	W	27	28	Diode, BJT large-signal	Ch. 4	7
Aug	F	29	29	BJT amps	Ch. 4	7
Aug	M	1	30	BJT amps	Ch. 4	
Aug	W	3	31	BJT amps	Ch. 4	
Aug	F	6		Test 3		

Lab 1: Intro: Thevenin, Norton, etc.

Lab 2: Non-Ideal Op Amps

Lab 3: MOSFET Common-Source Amp

Lab 4: Tone Control

Spice Workshop

Lab 5: CMOS Logic

Lab 6: Diodes

Lab 7: BJT Amp

EEE3308C Electronic Circuits

Summer C 2022

Description: Fundamentals of electronic circuits and systems. Lab.

Prerequisites: EEL 3008 Physics of EE

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

Room: MAE 303

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

UPIs:

Trevor Free (tbrian.free@ufl.edu)

Juan Orozco (juan.orozco@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*, 8th Ed. (You will need access to the textbook. Digital is fine.)

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

Parts Kit: You will need to order your own parts. See Parts List on the Canvas page.

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

Labs/ Times:

ONLINE/ZOOM

1	11712	Monday	E1 – E2	(7:00 – 9:45)	UPI: Juan
4	11711	Tuesday	6 – 7	(3:30 – 6:15)	UPI: Trevor
3	11713	Wednesday	E1 – E2	(7:00 – 9:45)	UPI: Juan
2	11712	Thursday	E1 – E2	(7:00 – 9:45)	UPI: Trevor

UPI Office Hours: TBD

Homework: ~ 1 per week

- Usually assigned Monday; due by class start time on Friday, where solutions will be discussed
- Goals are to illustrate and reinforce lecture topics and provide practice for quizzes
- Lowest score will be dropped
- It's OK to work in groups or to get tips from other students; you must push your own calculator buttons and the work you turn in must be your own.
- You won't learn as much from the homework if you depend on somebody else to tell you how to do it.
- Turn in homework online in Canvas as .pdf, .doc, .xls, or .asc.
- Late homework may be accepted at the instructor's discretion, typically for reduced credit.
- Turning in homework late based on my published solutions would be cheating.

Class Meetings:

Class Participation: The lectures will be recorded in the classroom, and available through Zoom. The lectures will be recorded and posted to MediaSite, where you can watch when you want. Whenever possible you should watch the lectures in real time so you can ask questions and participate in chats.

Zoom Etiquette:

I can teach more effectively if you keep your video on and audio off during lectures.

- 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: Anything in an assigned chapter of the book is fair game unless I 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:

- LTSpice. Download from <http://www.linear.com/designtools/software/>
- To help debugging SPICE runs, we need print-outs of input and output files, a schematic with labeled node numbers, .OP (Bias Point Detail) information, .OPTIONS, .MODELS, etc.

Labs:

Labs in 3308C are run similarly to 3701.

1. Before starting your lab section you will be expected to:
 - a. Understand the lab manual
 - b. Analyze and build the circuits
 - c. Perform most measurements at home with your Analog Discovery board
 - d. 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 handout** will be provided on Canvas for each lab. The lab handout is broken into pre-lab and in-lab sections. They will be graded separately.
4. The pre-lab steps and results are due before the lab starts.
5. You complete the in-lab steps while in contact with your UPI, and turn in
6. Failure to do any of these will negatively affect your lab score
7. **Lab Manuals** and **Pre-Lab documents** will be accessible before your lab date
8. There will be office hours to answer questions and help you get your lab working

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>.

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. With a University-approved excuse and arranged for in advance, or in an emergency, a make-up exam will of course be allowed.