EEE3308C Electronic Circuits
Syllabus Summer C 2018

			Lecture	Topic	Text
May	M	14	1	Intro; LTSpice	Ch. 1
May	W	16	2	Amplifiers intro, design-oriented analysis	Ch. 1
May	F	18	3	Voltage/current dividers, cascade amps	Ch. 2
May	M	21	4	Op amps	Ch. 2
May	W	23	5	Op amp applications	Ch. 2
May	F	25	6	Op amp non-idealities	Ch. 2
May	M	28		**Memorial Day: no class**	
May	W	30	7	NMOS FET regions of operation	Ch. 5
Jun	F	1	8	MOSFET amplifier	Ch. 5
Jun	M	4	9	MOSFET amplifier	Ch. 5
Jun	W	6	10	More FET amplifiers, review for Test 1	Ch. 7
Jun	F	8		**Test 1**	
Jun	M	11	11	Review test	Ch. 7
Jun	W	13	12	Coupling, bypass cap design, more small-sig	Ch. 7
Jun	F	15	13	Degeneration, source follower	Ch. 7
Jun	M	18	14	Other FET types, PMOS	Ch. 7
Jun	W	20	15	BJT amps	Ch. 6
Jun	F	22	16	Multi-stage amplifier design example	Ch. 8
Jun	M-F	23-30		**Summer break**	
Jul	M	2	17	Current mirror; active load	Ch. 8
Jul	W	4		**Independence Day: no class**	
Jul	F	6	18	Diff pair	Ch. 8
Jul	M	9	19	Diff pair	Ch. 8
Jul	W	11	20	Op amp internal circuits	Ch. 8
Jul	F	13		**Test 2**	
Jul	M	16	21	Circuit construction – practical details	
Jul	W	18	22	Diode applications, peak detector	Ch. 3
Jul	F	20	23	Super-duper diode	Ch. 18
Jul	M	23	24	Power supply	Ch. 18
Jul	W	25	25	Comparators, Schmitt trigger	Ch. 18
Jul	F	27	26	Relaxation oscillator, 555	Ch. 18
Jul	M	30	27	Wave-shaping circuits – guitar pedals	Ch. 18
Jul	W	1	28	Mixer/down converter	
Jul	F	3	29	Voltage-controlled gain amplifier	
Aug	M	6	30	Logic: NAND, NOR	Ch. 14
Aug	W	8	31	Logic: Flip-flop, SRAM	Ch. 14
Aug	F	10		**Test 3**	

Electrical & Computer Engineering

UF UNIVERSITY of FLORIDA
The Foundation for The Gator Nation

EEE3308C Electronic Circuits

Summer C 2018

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 330

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

Lab NINJAs:

Andy Zhong (zhonga4@ufl.edu)

Zane Mandell (zmandell@ufl.edu)

Steven Paek (stevenpaek11@ufl.edu)

Grad Asst:

Ali Sadeghian (asadeghian@ufl.edu)

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

Text: A. Sedra and K. Smith, *Microelectronic Circuits*, 7th Ed. 5th or 6th Editions may be usuable but 7th is preferred. YOU WILL NEED ACCESS TO THE TEXTBOOK.

Digilent 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

Labs

· NEB 211B

· 6 laboratories as assigned (about 2 weeks/lab)

72A6 Monday	E1 – E2 (7:00 – 9:45)	TA: Andy Zhong
72BA Tuesday	6 – 7 (3:30 – 6:15)	TA: Steven Paek
72B1 Wednesday	6 – 7 (3:30 – 6:15)	TA: Zane Mandell
72A9 Thursday	E1 – E2 (7:00 – 9:45)	TA: Andy Zhong

Homework: ~ 1 or 2 per week

· Usually due next class, where solutions will be discussed

· 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 NINJAs, 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 NINJA to find out what you missed.

· Attendance at labs is required. Work out any conflicts with the lab NINJAs 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: 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'll need print-outs of input and output files, a schematic with labeled node numbers, .OP (Bias Point Detail) information, .OPTIONs, .MODELs, etc.

Labs

The paradigm for labs in 3308C is similar to what's done in 3701C. You will get the lab handout well in advance of the actual lab date. You should understand the handout, analyze the circuit, build it on your breadboard, test it with your Analog Discovery board, get it working and do a preliminary report, **all at home, before** the official lab date. The professor and the TAs will have office hours to answer questions and help you get the circuit working.

The circuit must be working and your pre-lab report submitted at least 15 minutes before the official lab time to get full credit for the lab. If the TA believes you haven't tried hard enough to get it working in advance, you will be sent away and receive zero credit for that lab. So don't procrastinate!

Pre-lab reports should be submitted online as pdf's.

In the lab you'll be asked to demo your circuit, answer some questions about it and maybe do some additional measurements. The final report will usually incorporate the pre-lab handout, edited and supplemented to reflect anything new you learned in the lab itself. Lab final reports will be due a few days after the lab day.

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 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 Accomodations: 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. "

Honesty Policy

You are not allowed to cheat or to tolerate cheating. The University's honesty policy, which I follow, can be found at http://www.dso.ufl. edu/judicial/.

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.

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 will of course be allowed.