

Syllabus for EEE 3308C - Electronic Circuits 1

1. Catalog Description

Fundamentals of electronic circuits and systems. Laboratory. Credits: 4.

2. Pre-requisites

EEL 3008 Physics of EE, EEL 3111C Circuits 1, EEL 3112 Circuits 2.

3. Course Objectives

Learn the basics of electronic components, circuits, and systems. Design electronic circuits and systems to meet desired needs and specifications. Engage in life-long learning of electronics and related technologies.

4. Instructor: Dr. Yong-Kyu “YK” Yoon

- Office location: Larsen 225
- Office hours: @ Larsen 225 or larger room (if necessary)
Tue & Wed (1:00 pm – 1:50 pm)
- Telephone: 352-392-5985
- E-mail addresses: ykyoon@ece.ufl.edu, ykyoon@gmail.com
- Web site: <http://elearning.ufl.edu/> (Click "LOG IN TO E-LEARNING")
- Supervised teaching instructor: Marino D. Guzman <mguzman@ufl.edu>

5. Teaching Assistants:

- Juan Japata <juanz96@ufl.edu>: ,
Andy Zhong <zhonga4@ufl.edu>: ,
Anthony Dermody <atd216@ufl.edu>: ,
- Office location (in E-circuits lab): NEB 213B
 - Lab/TA hours: TBA (See Lab/Lecture schedule document)
 - TAs will assist with grading; operating the labs, and helping students with computer simulation and electronic circuit experiments.

6. Meeting Times

Lecture: T 2nd-3rd period (8:30-9:20am, 9:35am-10:25am)
R 3rd period (9:35-10:25am)

Office Hours	
Dr. Yoon	Tuesday and Wednesday 1-2 PM @ LAR 225
Marino Guzman	TBD
Juan Japata	@ NEB 213B
Andy Zhong	@ NEB 213B
Anthony Dermody	@ NEB 213B

7. Meeting Location

LAR 330

8. Material and Supply Fees

The Diligent Analog Discovery (DAD) board is required for this course (and many other ECE courses). Board ordering information can be found at this link:

<http://tinyurl.com/discov-ufl>

<http://www.diligentinc.com/Products/Detail.cfm?Prod=ANALOG-DISCOVERY>

Also, Electric Components need to be purchased.

9. Textbooks and Software Required

a. Title: **Microelectronic Circuits**

b. Author: A.S. Sedra & K.C. Smith

c. Publication date and edition: 7th Ed., Oxford University Press, 2014

d. ISBN number: 978-0-19-933913-6

e. LTSPICE IV: Available for free at <http://www.linear.com/designtools/software/>

f. MathCAD: Available at ECE Remote Access

10. Recommended Reading

Text book.

11. Course Outline (provide topics covered by week or by class period)

These may be adjusted as the course proceeds. See weekly calendar on the website for details.

See below.

12. Lab schedule

See below.

13. Attendance and Expectations

a. Attendance motivated by weekly quiz

b. Etiquettes: It is understood that attendees at lectures and labs will be focused on the particular lecture or lab and will take every possible measure to minimize distractions for everyone (i.e. no newspapers, no cell phones, no PDAs, no iPADS, no laptops, etc. unless instructed to use them for class, on-time attendance, and no early departures (unless noted and approved in advance)).

14. Grading – methods of evaluation

a. Homework: **5%** (Weekly)

b. Quizzes: **20%** (Weekly), Every Tuesday

c. Design and Experiment Project (DEP) labs **25%** (Weekly)

[Breakdown: 15% for prelab & design; 10% for timeliness; 15% for notebook reviewed and signed; 10% for lab conduct and cleanup; 50% for lab report]

d. Midterm: **25%** (One handwritten info sheet allowed)

e. Final: **25%** (Two handwritten info sheets allowed)

f. Design contest winners will receive prizes and extra credit in grading. (Details will be given in the class.)

15. Grading Scale

Grading Scale: ≥ 93 A; ≥ 90 A-; ≥ 87 B+; ≥ 83 B; ≥ 80 B-; ≥ 77 C+; ≥ 73 C; ≥ 70 C-; ≥ 67 D+; ≥ 63 D; ≥ 60 D-; < 60 E

16. Make-up Exam Policy

- a. There are no makeup quizzes or exams. With appropriate justifications & legal documents (UF Dean of Students, certified physician, military active duty, Judge for jury duty).
- b. For labs, an approved lab makeup must be done within one week of the lab unless written documentation from the approved sources listed above or justified otherwise.

17. Honesty Policy

All students admitted to the University of Florida have signed a statement of academic honesty committing themselves to be honest in all academic work and understanding that failure to comply with this commitment will result in disciplinary action. This statement is a reminder to uphold your obligation as a UF student and to be honest in all work submitted and exams taken in this course and all others.

18. Accommodation for Students with Disabilities

Students Requesting classroom accommodation must first register with the Dean of Students Office. That office will provide the student with documentation that he/she must provide to the course instructor when requesting accommodation.

19. UF Counseling Services

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

20. Software Use

All faculty, staff and student 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.

Tentative Teaching Schedule

Topic	Chapter	Periods (Approx.)
Orientation		1
Introduction	1.1-6	1
Operational Amplifiers - Analysis	2.1-3	1
Operational Amplifiers - Circuits	2.4-5	2
Operational Amplifiers – Non-ideal	2.6-8	2
Diode - PN junction operation	4.1, 2, 4, 7	1
Diode - Modeling	4.3-4	1
Diode - Circuits Application (Rectification, Regulation)	4.5-6	2
FET - Operation, DC models	5.1-4	1
FET - Small-signal operation and models	7.1-2	3
FET - Biasing; Discrete-circuit amplifiers	7.3-5	4
BJT - Operation; DC models	6.1-4	1
BJT - Small-signal operation and models	7.1-2	2
BJT - Discrete-circuit amplifiers	7.3-5	3
IC - Biasing; current sources; mirrors; steering	8.1-2	1
IC - Gain state; CG, CB amplifiers	8.3-4	3
IC - Cascode amplifier; active load	8.5-6	3
Differential Amplifiers - MOS Pair; BJT Pair; CMRR	9.1-3	3
Differential Amplifiers - Current mirror load	9.4-5	2
Differential Amplifiers - Multistage amplifiers	9.6	2
OP Amp Applications - LC Oscillator, Comparators, Schmitt Trigger, 555 timer, PWM	18.3-7	3
Exams and Quizzes		2.0 and 0.25 h

Tentative Lab Schedule

Topic	Periods
Power Supplies and Voltage Regulators	Week 2-3
Instrumentation Amplifier (Difference Amplifier and Filter)	Week 4-5
Diode Applications (Rectifier and Regulator)	Week 6-7
Op Amp Applications (Baxandall Tone Control)	Week 8-9
MOSFETs and Applications (Amplifiers)	Week 10-11
Transistor Amplifiers (AM Radio Receiver)	Week 12-13
Design Contest	Week 14