

EE 311 Syllabus - Fall 2013

Text:	<u>Microelectronic Circuits</u> Sedra/Smith, 6th Edition	Location:	Sloan 7
Instructor:	John Ringo ETRL 303, 335-5595, ringo@wsu.edu	Office Hours:	M, W, Th 1:00-2:00pm ETRL 303
Teaching Assistant:	Luke Renaud Sloan 323, luke.renaud@email.wsu.edu	Office Hours:	M, Th 3:00-4:00pm, Tue 2:00-3:00pm Sloan 323
Grading:	Curve	Final Exam:	Tuesday, Dec 12, 2013 3:10pm Comprehensive 125-150 points
Hour Exams:	3 – 100 points each		

Fundamentals Exam: During the first week, you will be given an exam in class (~20 min) to evaluate your understanding of elementary circuit concepts based on content you should have learned in your prerequisite circuits class. Upon return of the exam, you are expected to resubmit solutions to those problems that you did incorrectly. Your ability to master the concepts presented in this test is imperative for doing well on subsequent EE311 class exams.

HW/Quizzes: At the beginning of class on most Fridays when an exam is not scheduled, either homework will be collected or a quiz will be given. Either all of the assigned homework problems will be collected, a single problem to be graded will be selected from those assigned, or a quiz directly relating to the assigned homework will be given. It will only be known at the beginning of class on Friday which option will be selected. The quiz, if selected, will be open book and open notes. The selected option will be graded for a maximum of ten points. No late assignments or makeup quizzes will be given even in the event of illness as the lowest two homework/quiz scores will be discarded. The point total of the homework/quiz scores will be added to the total of your exam scores.

Week/Date	Chapter	Course Content	HW/Quiz OR EXAM (noted)
1 Aug 19-23	Chapter 1,2	Circuit Models for Amplifiers, Ideal Operational Amplifiers	Aug 23
2 Aug 26-30	Chapter 2	Non-Ideal Performance of OpAmps, Effects of Finite Open-Loop Gain	Aug 30
<i>Sept 2</i>	<i>Holiday</i>	<i>Labor Day</i>	
3 Sept 3-6	Chapter 2	Frequency Response, DC Imperfections	Sept 6
4 Sept 9-13	Chapter 3	Semiconductors, p-n Junctions, Diode Equation	Sept 13 EXAM
5 Sept 16-20	Chapter 4	Ideal Diode, Diode Models, Diode Applications	Sept 20
6 Sept 23-27	Chapter 5	MOS Field Effect Transistors (MOSFET), Physical Operation of Enhancement Mode (MOSFET), I-V Characteristics	Sep 27
7 Sept 30-Oct 4	Chapter 5	MOSFET Circuits at DC, Biasing the MOSFET, Small-Signal Model	Oct 4
8 Oct 7-11	Chapter 5	Single-Stage MOSFET Amplifiers	Oct 11 EXAM
9 Oct 14-18	Chapter 6	Bipolar Junction Transistor (BJT), Physics of Operation, I-V Characteristics	Oct 18
10 Oct 21-25	Chapter 6	BJT Circuits at DC, Biasing BJT Amplifier Circuits, Small-Signal Model	Oct 25
11 Oct 28-Nov 1	Chapter 6	Single-Stage BJT Amplifiers	Nov 1
12 Nov 4-8	Chapter 8	Differential Pairs (MOSFET & BJT)	Nov 8 EXAM
<i>Nov 11</i>	<i>Holiday</i>	<i>Veterans Day</i>	
13 Nov 12-15	Chapter 8	Differential Amplifiers	Nov 15
15 Nov 18-22	Chapter 9	MOSFET and BJT High-Frequency Models, Miller Effect, High-Frequency Response of CS & CE Amplifiers	Nov 22
<i>14 Nov 25-29</i>	<i>Holiday</i>	<i>THANKSGIVING BREAK</i>	
16 Dec 2-6		Miscellaneous Lectures & Review	
17 Dec 9-13	Final Exam Week	Final Exam Thursday, December 12, 2013 3:10pm	Dec 12 FINAL EXAM

Students with Disabilities

Reasonable accommodations are available for students with a documented disability. If you have a disability and need accommodations to fully participate in this class, please either visit or call the Access Center (Washington Building 217; 509-335-3417) to schedule an appointment with an Access Advisor. All accommodations MUST be approved through the Access Center.

EECS ACADEMIC INTEGRITY POLICY

THE SCHOOL OF ELECTRICAL ENGINEERING AND COMPUTER SCIENCE FULLY SUPPORTS THE ACADEMIC INTEGRITY POLICIES GIVEN IN THE [WASHINGTON STATE STANDARDS OF CONDUCT FOR STUDENTS](#). ADDITIONALLY, TO ENSURE AN ENVIRONMENT OF ACADEMIC INTEGRITY, THE SCHOOL HAS MADE ACADEMIC INTEGRITY A CRITERION FOR CERTIFICATION INTO ANY OF THE UNDERGRADUATE DEGREE PROGRAMS OFFERED BY THE SCHOOL. QUOTING FROM THE WSU CATALOG:

Qualification for initial certification, as well as continuation of certified status, will be evaluated based on several criteria including academic integrity, overall GPA, as well as GPA in mathematics, science, and electrical engineering or computer science courses.

EECS faculty who observe instances of academic dishonesty, i.e., cheating, will have the full range of options available to them that are outlined in the Student Handbook (including assigning a failing grade for the course). Additionally, faculty are encouraged to report all instances of academic dishonesty to either the Graduate or Undergraduate Program Coordinators, whichever is appropriate. The Coordinator will maintain in-house records of academic dishonesty and will forward all information to the [Office of Student Conduct](#). This information will also be shared with the EECS Instruction Committee. For undergraduates interested in pursuing a degree in the School, the Instruction Committee will weigh the evidence and make a decision concerning the student's certification status. Students who commit acts of academic dishonesty in an EE or CptS course who have not been certified may be ineligible for certification, while certified undergraduates may be decertified. If the student chooses to appeal the decision, a panel will be appointed by the Associate Director consisting of three faculty members from the School who were not previously involved in the decision process and two students from the appropriate degree program. The panel will review the evidence and hear any additional arguments the accused student may wish to present. A simple majority vote by the panel shall uphold or overturn the Instruction Committee's decision. The Director maintains ultimate decision authority and may overrule the decision of the Instruction Committee or the appeal panel.

One instance of academic dishonesty on the part of a graduate student may result in termination of support. The decision will be made by the Instruction Committee subject to the recommendation of the Graduate Studies Committee and input from the student's faculty advisor. An appeal panel will be appointed by the Associate Director should the student wish to appeal the decision of the Committee. As with the undergraduate case, the panel will consist of three faculty members from the School who were not previously involved in the decision process and two students from the respective degree program. A simple majority vote by the panel shall uphold or overturn the Committee's decision. Again, the Director maintains ultimate decision authority.

Faculty are encouraged to explain these consequences of academic dishonesty at the beginning of each semester and explain unambiguously what constitutes academic dishonesty in each course. However, ignorance of these consequences or of the definition of academic dishonesty in a particular class does not serve as an excuse. Students who observe acts of academic dishonesty may report their observations to the course instructor or to the Associate Director of the School.

Campus Safety

The Campus Safety Plan <http://safetyplan.wsu.edu> and University Emergency Management web site <http://oem.wsu.edu/> contain comprehensive listings of university policies, procedures, statistics, and information relating to campus safety, emergency management, and the health and welfare of the campus community. Along with the WSU ALERT site (<http://alert.wsu.edu>) where information about emergencies and other issues affecting WSU will be found. This site also provides information on the communication resources WSU will use to provide warning and notification during emergencies. It should be bookmarked on computers. Finally, all faculty, staff, and students should sign into their ZZUSIS account at zzusis.wsu.edu and register their emergency contact information for the Crisis Communication System (CCS). Look for the Emergency Information box on your ZZUSIS home page and click on 'UPDATE NOW' to be taken to the registration/update page where you can enter/update your cell, landline, and email contact information.

Course Outcomes and Assessment Measures

The principal student learning outcomes consist of the three ABET assessment outcomes listed in the table below together with the measures for assessing the outcomes. An important expectation of students to successfully complete the course is that they develop strong problem formulation and solving skills. A superficial approach to thinking and reasoning separates the good performers from those that perform poorly. It is further expected that students will be able to make meaningful simplifications of complex problems and judge the reasonableness of their answers. This ability is critical to the design process.

Outcome	Topics	Specific Measures
(A) Ability to apply knowledge of mathematics, science and engineering.	all	Most homework, quizzes and exams
(C) Ability to design a system, component, or process to meet desired needs.	all	Selected Homework Problems, Quizzes and Exam Problems. HW with prefix "D"
(K) Ability to use techniques, skills and modern engineering tools necessary for engineering practices.	all	Many Homework, Exam and Quiz problems emphasize problem solving skills. CAD tools are taught in accompanying lab