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EET 206.01: Solid State Electronics II

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Missoula College UM
Department of Applied Computing and Electronics
Course Syllabus

EET 206 Solid State Electronics II

Credits: 3

Prerequisite: EET 205 Solid State Electronics I

Term: Autumn 2013

Meetings

Lectures: MW 10:10AM to 11:00AM in HB 05

Labs: Tuesday 9:10AM to 11:00AM in HB 05

Final Exam

Friday, December 13, 2013 8:00AM to 10:00AM in HB05

Faculty Contact

Steve Shen – steve.shen@umontana.edu

Phone: 406-243-7914

Office Hours: Monday 11:00AM to 12:00PM

Wednesday 3:00PM to 4:00PM

Thursday 12:00PM to 1:00PM

Office: Griz House 8

Course Description

EET 206 Solid State Electronics II 3 cr. Offered autumn. Prereq. EET 205. An introduction to semiconductor technologies used in solid state electronics with an emphasis on amplifier circuits, field effect transistors, thyristors, and operational amplifiers. Classroom concepts are reinforced through lab-based experiments.

Course Overview

This course introduces the fundamentals of electronic discrete devices and circuits, and linear integrated circuits with applications and troubleshooting coverage. An introduction to programming for device testing is also included in the course.

Please note the course requires the purchase and downloading to your personal pc of the Multisim Software to perform the assigned lab experiments from the lab manual accompanying the Floyd text. This software is a onetime purchase and will be used with the other electronics courses as well. Instructions for this purchase requirement will be provided and assistance with starting it up on your pc will be available as well.

Course Objectives

Upon completion of this course students will be able to:

- Describe and analyze frequency response of amplifiers
- Describe Thyristors and circuits with applications
- Explain the operational circuits
- Analyze basic Op-Amp circuits
- Describe special-purpose Op-Amp circuits
- Describe and analyze active filters
- Describe and analyze oscillators
- Describe and analyze voltage regulators
- Explain basic programming concepts for automated testing

Required Materials

Electronic Devices, conventional current version, Ninth edition, Thomas Floyd, Prentice Hall 2012.

Laboratory Exercises for Electronic Devices, Ninth Edition, by Dave Buchla and Steve Wetterling.

Scientific Calculator (recommend TI 84-Titanium, TI 86, or TI 89)

Multisim circuit simulation software: Here is a link for its purchase and download.

<http://www.studica.com/us/en/National-Instruments/multisimstudentedition.html>

Evaluation Procedures

Grades will be assessed as follows

Assessment Area:

Attendance	10%
Homework Assignments	20%
Midterm Exam	20%
Final Exam	30%
Lab Exercises	20%

Grading Scale:

90-100%	A
80-89%	B
70-79%	C
60-69%	D
Below 60%	F

General Requirements for the Course

1. All the assigned lab experiments and projects are to be done **with physical components**, unless otherwise indicated by the instructor.
2. Multisim simulations are required for some of the lab experiments.
3. Please **demonstrate every lab experiment and project** to the instructor as soon as you complete them.
4. Late work may be accepted at most one week after the due date and can receive a maximum of **80%** of the full credit.
5. No work will be accepted **one week after the due date**, or after the solutions have been gone through.
6. No work will be accepted after the final week of the semester.

Academic Integrity:

All students must practice academic honesty. Academic misconduct is subject to an academic penalty by the course instructor and/or a disciplinary sanction by the University. All students need to be familiar with the Student Conduct Code. The Code is available for review online at:

http://life.umt.edu/vpsa/student_conduct.php

Using the Web to research materials and concepts is an integral part of learning in the twenty-first century. Studying with other students is a productive method of learning. A certain amount of collaborating on concepts with other students and using resources found on the Internet in an assignment is recommended. Copy and paste is not acceptable. It is expected that each student will input his/her assignment into the computer, and each student must be able to explain any assignment turned in. Collaboration on exams is strictly forbidden.

Dropping and Adding Courses or Changing Sections, Grading or Credit Status:

University Policy for dropping courses or requesting grading/credit status changes can be found in the catalog or on the web <http://www2.umt.edu/catalog/acpolpro.htm#adding>. All students should be familiar with the policy.

Disability Accommodations:

Eligible students with disabilities will receive appropriate accommodations in this course when requested in a timely way. Please contact me after class or in my office. Please be prepared to provide a letter from your DSS Coordinator. For more information, visit the Disability Services website at <http://www.umt.edu/dss> or call 406.243.2243 (voice/text).

Changes to Syllabi:

NOTE: Instructor reserve the right to modify syllabi and assignments as needed based on faculty, student, and/or environmental circumstances. If changes are made to the syllabus, amended copies will be dated and made available to the class.

Exam, Quiz, and Homework Assignment Policy:

All quizzes and homework assignments are to be completed on-time. Late assignments will be accepted at the instructor's discretion. Exams are only to be completed on the assigned date. Rescheduling of an exam will be approved at the discretion of the instructor and only in extraordinary situations.

Technical Support for Online Students:

Technical support is available through <http://umonline.umt.edu> and by telephone at 406.243.4357 for the IT Central Help Desk and 406.243.6394 for Moodle specific questions.

Topic Outline for EET 206 Solid State Electronics II

1. Amplifier Frequency Response
2. Thyristors
3. The Operational Amplifier
4. Basic Op-Amp Circuits
5. Special-Purpose Op-Amp Circuits
6. Active Filters
7. Oscillators
8. Voltage Regulators
9. Basic Programming Concepts for Automated Testing