

# CEEN 2220      Electronic Circuits I      Fall 2008

---

Instructor:      Dr. Yaoqing (Lamar) Yang      Office:      PKI 201B  
E-mail:      yyang@mail.unomaha.edu      Telephone:      402-554-3916  
Office Hours:      Tues. & Thurs. 02:00pm-4:30pm; (other times by appointment)  
Meeting:      Thurs. 5:30pm-8:10pm @ PKI 155  
Lab(CEEN 2234):      Thurs. 8:20pm-10:50pm @ PKI 305  
Teaching Assistant: TBD

## Course Description

Introduction to the design and analysis of solid-state electronic circuits; terminal characteristics and models of diodes, bipolar and field-effect transistors (FET); design and analysis of diode circuits, bipolar and field effect transistor circuits; transistor amplifiers and switching circuits, operational amplifiers.

**Required Text:**      *Microelectronic Circuits*, Sedra and Smith, 5th Edition, Oxford University Press 2004  
ISBN: 0-19-517267-1

**Pre-requisites:**      CEEN 2130,      Math 3350

**Co-requisites:**      CEEN 2234, and required text: *Hands-On Electronics*, Daniel M. Kaplan and Christopher G. White, Cambridge University Press 2003, ISBN: 0-521-89351-8

**Course Outcomes:** The student who successfully completes this course will be able to

1. understand the basics of semiconductor materials
2. understand the characteristics of semiconductor diodes, bipolar junction transistors and FET
3. understand the nonlinear current vs. voltage characteristics of diodes and transistors
4. understand the principles of diode rectification and regulation, transistor amplification and switching
5. perform large and small signal analysis of diode circuits using appropriate diode models
6. analyze basic voltage rectifier and regulator circuits
7. perform large signal and bias analysis of transistor circuits
8. perform small signal modeling of transistors
9. analyze single-stage transistor amplification and switching circuits.
10. analyze differential transistor amplification and switching circuits.

## Course Landmark Schedule:

10/2/08	EXAM 1 (Chapter 1 ~ 5)	50minutes
11/6/08	EXAM 2 (Chapter 6 ~ 10)	50minutes
TBD	FINAL EXAM (all contents)	two hours

**Grading Weights:** Homework 20%; Quizzes 10%; Exam#1 20%; Exam#2 20%; Final Exam 30%

## Important note:

The instructor reserves the right to assign other required and/or optional assessment exercises and “pop quizzes” to be included in the grade assignment. Homework assignments are due at the beginning of the next meeting session (5:30pm on Thursday). Discussion and collaboration are strongly encouraged for your homework. However you must turn in solutions of your own (no division of work). No late homework assignments will be accepted for a grade. Quizzes will be given at the beginning of the meeting session (5:30pm on Thursday). Quiz duration: 10 minutes. Exams 1 and 2’s duration: 50 minutes. Final exam duration: 2 hours. All exams and quizzes will be “closed book”.

N.B.: In this course, you will be held responsible for material from two sources; the meetings and the text. This means material presented in the meetings but not included in the text, and material presented in the text but not included in the meetings will be covered by the exams and quizzes.