Instructor: Xiangnan Zhong  
Office: B261  
Course Website: EENG 3510 on UNT Blackboard  
Email: Xiangnan.Zhong@unt.edu  
Office Hours: Monday & Wednesday From 2:50 - 3:50 PM (after class) or by appointment

TA: Yunlong Qi  
Email: YunlongQi@my.unt.edu  
TA Office: B209  
TA Office Hours: Tuesday & Thursday From 2:00 – 3:00 PM or by appointment

Course Description
Electronics I. Introduction to contemporary electronic devices, terminal characteristics of active semiconductor devices, and models of the BJT and MOSFET in cutoff and saturation region are introduced. Incremental and DC models of junction diodes, bipolar transistors (BJTs), and metal-oxide semiconductor field effect transistors (MOSFETs) are studied to design single and multistage amplifiers.

Textbooks
PDF is available online

Prerequisites
EENG 2610 Circuit Analysis, solid algebra skills, and basic calculus.

Course Objectives
This course provides introductory topics in analog and digital electronics. Together with EENG 3520, it constitutes the foundation for discrete and integrated analog circuit analysis and synthesis. At the end of the class, the student should be able to:
- Describe how electrical and computer engineering uses or benefits from electronics.
- Explain with justification the properties of operational amplifiers, diodes, MOS field-effect transistors, and bipolar junction transistors.
- Model, analyze and to a certain level synthesize circuits containing a few transistors.
Grading Policies
Homework: 20% (NOT accepted if late*)
Mid-term Exams (3): 60% (20% each)
Final Exam: 20%
* late is after class is over
* no bonus points

General Comments
- Students are encouraged to discuss class material and homework in order to better understand concepts. However, all the homework you submit must be of your own (or your team’s). Direct copying of a solution (from a friend or a book) will be considered as plagiarism and a violation of the University Honor Code. If you cheat I will find out and you will be disciplined.
- Homework assignments are to be turned in at the beginning of the class on the due date. Late submission (once class is over) will not be accepted.
- The midterms and final are closed book with one page and two pages, respectively (8 ½ x 11) of notes allowed. Make up exams may be given only under exceptional circumstances and with prior approval of the university.
- All students are responsible for announcements made in lecture or via Blackboard.
- It is the responsibility of students with certified disabilities to provide the instructor with appropriate documentation from the Dean of Students Office (see http://www.unt.edu/oda).
- If you have a university approved excused absence you have 1 week from your return date to complete and turn in any missed work (HW, exams).

Tentative Course Calendar
- Topic 1: Circuit Analysis Review
- Topic 2: Amplifier Models (reading 1.4-1.5)
- Topic 3: Operational Amplifiers (reading 2.1-2.5, 2.8)
- Topic 4: Diodes (reading 4.1-4.3, 4.5)
- Topic 5: Bipolar Junction Transistors (reading 6.1-6.4)
- Topic 6: MOS Field-Effect Transistors (reading 5.1-5.4)
- Topic 7: Transistor Amplifiers (reading 7.1-7.5)