

EECS 320
Introduction to Semiconductor Device Theory - Winter 2010

- Instructors:** Prof. P.C. Ku – 2245 EECS, 764-7134, peicheng@umich.edu
Prof. Zhaohui Zhong – 2241 EECS, 647-1953, zzhong@umich.edu
- Class Hours:** Lec. 001 (Ku) – Monday and Wednesday, 12:00-1:30pm, 1003 EECS
Lec. 002 (Zhong) – Monday and Wednesday, 10:30am-12pm, 1690 CSE
- Discussion Sections:** Dis. 011– Tuesday, 1:30-2:30pm, 2315 GGBL
Dis. 012– Wednesday, 3:30-4:30pm, 104 EWRE
Discussion sessions will start the week of January 18. Homework is typically due at noon on Thursdays. The 1st homework is due on Jan 21.
- Office Hours:** Ku – Monday 1:30-3:30pm, Tuesday 2:30-3:30pm
Zhong – Tuesday 3:30-5pm, and Friday 9-10:30 am
- Textbook:** Pierret, Robert F., *Semiconductor Device Fundamentals*. New York: Addison Wesley Longman, 1996. ISBN 0-201-54393-1
- Email Questions:** Include “EECS 320” in the subject line for faster responses (otherwise you risk the message getting buried in the daily e-mail flood). **Use email as a last resort, and limit email questions to brief clarifications, etc. If the question requires a response of more than 1 sentence, ask in person.**
- Grading:** Grades for this course will be based on homework, midterm exams and a final exam in the following proportions:
- Homeworks (approximately 10) 25%
 - Midterm Exams (2) 50%
 - Final Exam (Comprehensive) 25%
 - Class participation will be used to adjust letter grades in borderline cases.
- Letter grades will be assigned at the end of the term** and will be based on the instructor’s assessment of student comprehension of course material. The class is typically graded on a curve with a mean corresponding to a grade of B (3.0/4.0). In the case of excellent student performance, the mean grade may be elevated, or even placed on a straight scale (you can all get A’s!).
- Homework and Exams:** **Discussion in small groups is encouraged** for homework. However, each student should **work through problems individually (no collaborative efforts)**. Discussing approaches to problems, concepts, etc, is encouraged, and comparison of final answers is acceptable. Exams will be completed individually, during class time, and will be closed book. Calculators are required, but should be used for computation only. Notes and/or equations programmed into calculators are forbidden. Computers other than standard scientific calculators (e.g. laptop or handheld) are not permitted on the

exams.

Re-grade Policy, Homework/Exam pickup: Following the return of a graded homework or exam, students will have one week in which to submit a request for regrade. The request should explicitly indicate the grading discrepancy on a cover page stapled to the assignment. Homework not picked up in class, or considered for regrade, will be placed in a filing cabinet across the hall from 2312 EECS. Exams may be picked up during office hours or after class.

Keys to success: This course requires you to **think** and **understand concepts**. The ability to perform mathematical calculations, or reproduce a problem solving procedure alone will not allow you to succeed. The concepts in this course are more abstract than most 2xx and 3xx EECS courses, with a higher demand on critical thinking and lesser demand on repetition and mechanical calculations (a sharp contrast to EECS 215). It is essential that you develop **good study habits: read before lecture, attend and actively participate in all class sessions, and be sure to understand concepts in homework** (do not merely seek the answer).

Computer-based Resources: The course text (Pierret) includes several computer based examples and homework problems. The text uses MATLAB as the software program for these exercises. The homework assigned for this course will include some of the computer-based homework problems from the text, and some additional homework problems requiring the use of a computer (or perhaps a sophisticated calculator). The use of MATLAB is encouraged, though you are permitted to use any software or programming language you prefer (Excel, Fortran, C, Mathematica, MathCAD). The program files for the MATLAB scripts in the course text may all be downloaded from <ftp.mathworks.com> in the directory pubs/books/pierret.

At several points during the semester, we will refer to the Semiconductor Applet Service located at <http://jas.eng.buffalo.edu/>. This site has put together several interactive web-based simulations that may help visualize concepts presented in this course.

Honor Code Statement: It is expected that all material you submit for this class will be your own work. It is permissible to discuss homework assignments, but each student must prepare and submit their own work. Exam etiquette shall be in accordance with the College of Engineering honor code policy.