

Instructor: Dr. Jim P. Zheng Room 346 Lecture Hours: TR: 1:15-2:30pm
Office Hours: TR: 2:30-3:30pm
Phone: (850) 410-6464
Email: zheng@eng.fsu.edu
<http://www.eng.fsu.edu/~zheng/>

Prerequisites: EEE 3300 and 3300L (grading C or better)

Required Textbooks: Stephen A. Campbell, Fabrication Engineering, 3rd Ed, Oxford University Press, New York, 2008, ISBN: 978-0-19-532017-6

Course Highlight: This course outlines the basic principles underlying fabrication processes for devices and integrated circuits made from silicon.

Course Objectives: At the conclusion of this course, you should be able to

1. Explain some important properties of solid-state materials such as, crystalline structure, Miller indices, and impurity. (Chapter 2)
2. Describe single crystal growth, thermal diffusion and oxidation, ion implantation, and contact formation processes. (Chapter 3-6)
3. Describe optical, electron-beam lithography concepts. (Chapter 7-9)
4. Explain the gas kinetic theory, vacuum pump and measurement. (Chapter 10)
5. Describe Wet and dry chemical etching processes. (Chapter 11)
6. Describe thin film deposition processes. (Chapter 12-14)
7. Describe the fabrication of complete microelectronics. (Chapter 15-16)

Grading:

Two Examinations:	50%	(25% from each exam)
Homework:	10%	
Final Examination:	40%	(a comprehensive exam)
Attendance and Quizzes:	5%	(bonus points, no credit will be awarded if one missed more than 3 lectures)

Grading scale: **A: >90%, B: 80-89%, C: 65-79%, D: 50-64%, F: <50%**

These breakpoints may be lowered slightly depending on overall class performance.

Policy Statements:

- Attendance is mandatory.
- Coming late (5 minutes) or leaving early (5 minutes) will be considered as the absence from class.
- Homework is due at the beginning of class. No late homework will be accepted.
- The general policy is no makeup exams and quizzes. In the event of an excused absence, you must notify the instructor prior to the exam to discuss proper procedure.
- Cellular phones and beepers must be turned off in the classroom.
- There is renewed emphasis on the Honor Code. Violation of this code can result in course failure and/or dismissal from the College of Engineering.