Southern Illinois University at Carbondale
Spring 2011
Syllabus: ECE447 Semiconductor Devices

Instructor:

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Office Hours: MW 1:10–3:00 PM, and by appointment
Lecture: MWF 3:00–3:50 PM, Engineering A Wing Room 220
Labs: online simulations on nanoHUB.org and Sentaurus Medici simulator
Prerequisite: ECE375, ECE345; or equivalent

new addition!

Textbook: Solid State Electronic Devices, 6th edition, by Ben Streetman and Sanjay Banerjee, ISBN# 9780131497269.

Course Topics:

Introduction {2 classes}
Atoms and electrons, quantum mechanics {4 classes}
Crystal properties and energy bands {2 classes}
Carrier statistics, generation and recombination {3 classes}
Carrier transport mechanisms {3 classes}
PN diodes {4 classes}
Field-effect transistors {10 classes}
Bipolar junction transistors {6 classes}
Optoelectronic devices {4 classes}
Integrated circuits {2 classes}

Evaluation:

Quizzes (best 4/6)	20%
Homework	15%
Midterm Exam	20%
Final Exam	30%
Lab	15%

Note:

1. Students are responsible for all announcements made in the class and posted on SIUC's webCT (blackboard).
2. Class materials and HWs will be posted on SIUC's webCT (blackboard) portal.
3. Emphasis will be given on the *conceptual understanding* of the subject-matter rather than on memorization of equations.