ECE 132 – Introduction to Solid-State Electronic Devices

UNIVERSITY OF CALIFORNIA, SANTA BARBARA
DEPARTMENT OF ELECTRICAL AND COMPUTER ENGINEERING

ECE 132 is an introductory course in semiconductor device physics for electrical engineers. The course builds on material covered in introductory physics courses, with an emphasis on applications relevant to future work in electrical engineering. We will cover the following topics:

- Introduction to semiconductor physics
- Intrinsic semiconductors, carriers
- Doping (impurities) in semiconductors
- p-n junctions, applications of p-n junctions (LEDs, solar cells, etc.)
- Bipolar transistors
- Field Effect Transistors (time permitting)

Discussion sections will be used for honing problem-solving skills and reviewing lecture material, but may also be used for make-up lectures and exam reviews. Quizzes will be given during discussion section and will be considered in the final grade.

Prerequisites: Math 4B or 5A, Phys 4 or 24, ECE 10A-B, and ECE 10AL-BL, or equivalents

Time and Place: TR 9:30-10:45AM, PSYCH 1902

Instructor: Ilan Ben-Yaacov, x5295, ESB Room 2213, **ilan@ece.ucsb.edu**

Office Hours: Mon 2:15-4:00pm in ESB Room 2213

Discussions: Tuesday 5:00-6:50pm in PHELPS 1445
Wednesday 7:00-8:50pm in PHELPS 1508
Friday 9:00-10:50am in PHELPS 3519

Textbooks: Required text:
Solid State Electronic Devices (7th Edition), by Streetman and Banerjee, Pearson, 2015, ISBN: 0-13-335603-5

Web Site: **http://www.ece.ucsb.edu/courses/ECE132/132_F17Ilan/**

Homework: Homework assignments will be posted on the class website and are due by 5pm on the posted due-date in the course homework box in HFH. ***Late homeworks will receive zero credit.***

Exams: A midterm exam and a comprehensive final will be administered. The midterm will be on November 9, 2017 in class, and the final will be during finals week.

Grading: Tentative breakdown, **subject to change**:

Quizzes:	10%
Homework:	20%
Midterm Exam:	25%
Final Exam:	45%

TAs:

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TA Office Hours: See Class Web Site
