

*Department of Electrical Engineering
University of California - Riverside*

EE133: Solid-State Electronics

Class type: LEC Day: MWF Time: 2:10PM-3.00PM Location: WAT 1111
 DIS W 11:10PM-12PM SPTH 1222

Instructor: Dr. A. Balandin
Email: alex@ee.ucr.edu

Office: Bourns Hall, A227
Hours: MWF 3.00PM-4.00PM
(or by email appointment)

Teaching Assistant: to be announced

Prerequisite: EE100 or similar course or relevant solid-state physics background

Final Exam: 06/11/2001 from 3pm to 6pm

Course Description

This is a one-quarter course for 4 credits. The course presents fundamentals of the solid-state electronics. The topics include electronic band structure of semiconductors, basic concepts such as Fermi level, band gap, mobility, carrier recombination, etc. The main emphasis will be on principles of the solid-state device operation. The devices that will be considered in detail include field-effect transistors, bipolar and metal-oxide-semiconductor transistors. The course will also cover device fabrication issues, particularly overview of the molecular beam epitaxy, manufacturing of contacts and p-n junctions.

Tests

At the instructor discretion, short tests might be given to determine the student understanding of the homework and class material. The test score will be treated on the same scale as the homework score.

Grading:

Homework	20%
Midterm	30%
Final	50%

Homework

Homework will be assigned biweekly, and it will be collected on Mondays at the beginning of class. No late homework will be accepted. It will be graded on a scale from 0 to 100 with 100 being the maximum score.

Textbook

B. Streetman and S. Banerjee, *Solid-State Electronics*, Prentice Hall, New Jersey, 1999.