Goals for Exam 5: ECE 305, Friday, April 17 2015
Mark Lundstrom
Purdue University

The exam will be conducted in class and will consist of three questions. The first question is multiple choice and is about basic concepts and vocabulary. The second two questions are “workout” problems similar to the problems in the homework assignments.

You should bring a calculator. The only calculator permitted for exams in ECE undergraduate courses is the Texas Instruments TI-30X IIS scientific calculator.

A sheet of key equations will be provided.

This exam will test your understanding of and ability to work with three concepts/topics:

1) MOS fundamentals – MOS capacitors, energy band diagrams, bandbanding, depletion approximation electrostatics, capacitance vs. voltage, metal-semiconductor workfunction differences, effect of charge at the oxide-semiconductor interface, etc.

2) MOSFETs – the essentials (square law theory, linear region theory, velocity saturation theory, basic features of IV characteristics.

To do well on this exam, you should thoroughly understand the assigned reading, homework, and quizzes. For MOSFET IV, you should be familiar with Prof. Lundstrom's lectures notes available in the Week 12 section of the course home page.

This exam covers materials in Weeks 11-13. Homework assignments 11, 12, and 13 are relevant for this exam.