Text Microelectronic Circuits by Sedra & Smith (& Carusone & Gaudet)

HW Homework will not be graded based on right or wrong answers, but on the level of effort shown in what you submit each week. Each assignment is to be submitted on the due date at the beginning of class. No late homework will be accepted. Homework grading will be done using one of three scores: 10, 5, or 0. A complete/good effort and understanding demonstrated will receive a 10; insufficient work will receive a 0; and a 5 for something in between.

Exams Exams are closed book, closed notes, and no calculator. I will provide a “reference sheet” for the exam. This sheet will be made available well before the exam so that you’d know what to expect.

OH Please ask specific questions at office hours, referring to a copy of my own writing (e.g. posted lecture notes, homework solutions...). Bring printed notes/solutions that I posted or show it on your laptop or tablet (not on your phone).

Grade Homework 15%
Midterm-1 25% (Monday Feb-3 in LINC 128)
Midterm-2 25% (Monday Mar-2 in LINC 128)
Final 35% (Tuesday Mar-17 9:30-11:20am)

Academic Dishonesty (cheating) is defined as an act of deception in which a student seeks to claim credit for the work or effort of another person, or uses unauthorized materials or fabricated information in any academic work or research, either through the student's own efforts or the efforts of another. [See Code of Student Conduct document at http://studentlife.oregonstate.edu/studentconduct]. Exams: Talking, looking at another student’s exam, using prohibited items like cellphone, notes, calculator... Homework: Copying (whole or partial) solutions, copying (whole or partial) another student’s work... What will be the penalty? You will receive 0% for that and potentially for the entire course. You will also be reported to the university.
Your reading guide for the course...
Section numbers are from the eighth edition, but you can find the same topic in older editions.

Course overview; ECE 322 review
  5.1 Device structure and physical operation (MOSFET)
  5.2 Current-voltage characteristics (MOSFET)
  5.3 MOSFET circuits at DC
  6.1 Device structure and physical operation (BJT)
  6.2 Current-voltage characteristics (BJT)
  6.3 BJT circuits at DC
  7.1 Basic principles (transistor amplifiers)
  7.2 Small-signal operation and models (transistor amplifiers)

Single stage amplifiers
  7.3 Basic configuration (transistor amplifiers)
  7.4 Biasing (transistor amplifiers)
  7.5 Discrete-circuit amplifiers (transistor amplifiers)

Multi stages & building blocks
  8.2 IC biasing: current sources and current mirrors
  8.3 The basic gain cell
  8.4 The common-gate and common-base amplifiers as current buffers
  Parts of 9.* (differential and multistage amplifiers)

Frequency response
  10.1 High-frequency transistor models
  10.2 High-frequency response of CS and CE amplifiers
  10.3 The method of open-circuit time constants
  10.8 Low-frequency response of discrete-circuits CS and CE amplifiers

Feedback
  11.*

Oscillators/feedback & stability
  15.1 Basic principles of sinusoidal oscillators
  15.2 Opamp-RC oscillator circuits
  15.4 Nonlinear oscillators or function generators

Digital logic
  16.1 CMOS logic-gate circuits
  16.2 Digital logic inverters
  16.3 The CMOS inverter
  17.2 Transistor sizing (Digital design: power, speed, and area)