# EE105
# Microelectronic Devices and Circuits

**Prof. Ming C. Wu**

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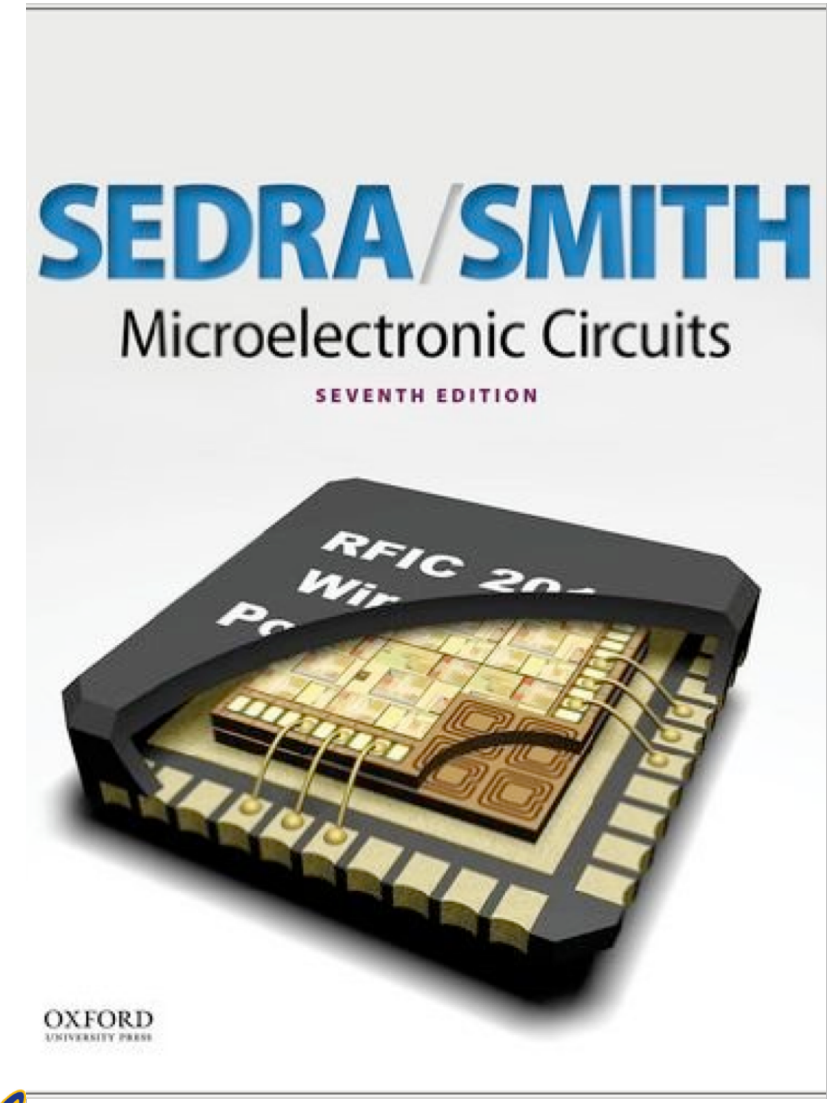
**511 Sutardja Dai Hall (SDH)**



# Course Information

- **Instructor:**
  - **Professor Ming C. Wu**
  - **Email: mingwu@berkeley.edu**
  - **Office 511 Sutardja Dai Hall (SDH)**
  - **OH: Tuesday 2-3 pm; Thursday 11-12 am**
  - **Best way to communicate: Email**
- **GSIs:**
  - **Kevin Han, kyh@berkeley.edu (15 hour GSI)**
  - **Jean-Etienne Tremblay, jetremblay@berkeley.edu (20 hour GSI)**
  - **OH to be announced after survey**

# Textbook




- Sedra/Smith, Microelectronic Circuits, 7th edition, Oxford University Press (2014)
  - Excellent book to learn basic electronics
- Required reading
  - Assigned in syllabus
- Best to read the relevant sections before lecture
  - Enables meaningful in class discussions

# Course Web Sites

- **Class website**
  - **General course info, lecture notes, Labs, HW problems**
  - **http://inst.eecs.berkeley.edu/~ee105/sp19/**
- **bCourses**
  - **https://bcourses.berkeley.edu/**
  - **Grades (check frequently, and inform GSI of any discrepancy)**
  - **HW, Exam solutions**
- **Piazza**
  - **Sign up at piazza.com/berkeley/spring2019/ee105**
  - **All announcement will be posted here**
  - **Mostly student run**
  - **GSI resources are very limited this semester so don't expect someone to be online 24/7**

# Course Components

- **Lectures**
  - Tuesday and Thursday 9:30A-10:59A @ 521 Cory
- **Discussion Sessions**
  - DIS 201 F 11:00A-11:59A @ 243 Dwinelle
  - DIS 202 W 2:00P-2:59P @ 126 Wheeler
- **Labs (all @125 Cory)**
  - LAB 101 M 8:00A-10:59A
  - LAB 102 M 2:00P-4:59P
  - LAB 103 M 5:00P-7:59P

# Homeworks

- Weekly HW will be posted on Friday
- Due the following Friday at 11 pm
  - Submit your HW at bCourses
  - Late homework will not be accepted
  - Solution will be posted in bCourses
  - The lowest score HW will be dropped
- Be prepared to spend 6 - 10 hours to complete
  - Reading, Problem solving
- You can discuss homework problems with other students in the class, the GSIs, or the instructor
- The work you submit for grading must be your own

# Labs

- Lab is an integral part of this course
- You must complete all labs to pass the course!
- 3 hour lab sessions
  - Plenty of time if you do your Prelab in advance
  - Not enough time if you are trying to figure out what to do on the spot
  - Allow 5 to 10 hours for your Prelab. You may need to read ahead
- Prelab is due at the beginning of your lab session
  - GSI will check off your Prelab
- Lab reports are due at the beginning of the following Lab
  - Late report will be discounted (10% per week late)
- Work in groups of two (find your partner now)
- Each student must individually turn in his/her own Prelab and Lab reports

# Grades

- **Homework: 15%**
  - **Lowest score will be dropped from grade calculation**
  - **(You can miss one HW without impacting your grade)**
- **Lab: 30%**
  - **You must complete all labs to pass the course!**
- **Midterm-1: 15%**
- **Midterm-2: 15%**
- **Final Exam: 25%**
- **Cheating will result in automatic Fail**
  - **Copying HW, Lab data, Pre-Lab, Lab reports is cheating**

# Circuit Simulation

- **SPICE**
  - **Simulation Program with Integrated Circuit Emphasis**
  - **Developed at UC Berkeley!**
    - **Outgrowth of CANCER (Computer Analysis of Nonlinear Circuits, Excluding Radiation)**
  - **Interesting read: https://en.wikipedia.org/wiki/SPICE**
- **Many versions of SPICE**
  - **We will use HSpice and LTSPICE**
    - **HSpice through class account. You can request an account at http://inst.eecs.berkeley.edu/webacct**
    - **LTSPICE free download from Linear Technology http://www.linear.com/designtools/software/#LTspice**