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

  - 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