Welcome to EE247B/ME218
Introduction to MEMS Design
Prof. Clark Nguyen

Lecture 1: Admin & Overview

• Announcements:
  • EE C247B/ME C218: Introduction to MEMS Design
  • Instructor: Prof. Clark T.-C. Nguyen

• Lecture Topics:
   A Bit About Me
   Course Syllabus (information sheet)
   Course Schedule
   Grading Information and Policy
   Definitions for MEMS
   MEMS roadmap

• Course Website:
  • https://inst.eecs.berkeley.edu/~ee247b/sp21/

• Lecture pdfs and video will post on the course website in the “Lecture” link
   Pdfs nearly immediately
   Videos maybe 2 days later (post processing)
   If you miss a lecture … can watch the video, if successfully recorded
   Warning: People who think they will watch the videos, often don’t get time to do so

• Discussions start next week

• Piazza is generally the best way to ask questions and communicate concerns
   You will be added to the Piazza course page
   The access list will be updated weekly to account for newcomers and drops
• How many have taken EE 147/247A?
• How many have taken ME 119?
• How many have taken EE 143?
• How many know microfabrication basics, i.e., oxidation, diffusion, etc.?
• How many already know MEMS fabrication?
• Now, start going through Module 1: Admin & Overview

What You Should Know:
• Basic circuit analysis & design using op amps
• But don’t need to remember this till the last few weeks of class
• You have a lot of time to review and if you haven’t had this, you can learn in by just reading a chapter in a textbook
• Example: Find the transfer function $v_o(s)/v_i(s)$ of the circuit below.

\[
\begin{align*}
N_0 &= -i_\omega \left(R_f ii_\omega C_f\right) \\
\bar{s} &= j\omega \\
\bar{v}_i &= \bar{v}_f + \bar{v}_c \\
\bar{v}_o &= \frac{1}{R_f} \frac{1+j\omega R_f C_f}{1+j\omega R_f C_f} \bar{v}_i
\end{align*}
\]