Lecture 1: Admin & Overview

- Announcements:
- EE 140: Analog Integrated Circuits
- Instructor: Prof. Clark T.-C. Nguyen
- Webcast: wireless mic
- http://webcast.berkeley.edu/course_details_new.php?seriesid=2011-B-25461&semesterid=2011-B
- Office Hour Changes?:
  - No changes requested
- For the course website, just google ee140
  - The website should be up and running in a couple of days
- I will be traveling this coming Thursday and next week on Tuesday
  - TA's will lecture on these days; it's review material
  - I will be out of town, so will not be able to hold office hours thru Wednesday, next week
- Discussion sections start next week
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- Lecture Topics:
  - Review
    - —Ideal Op Amps
    - —Non-Ideal Op Amps
  - Op Amp Examples
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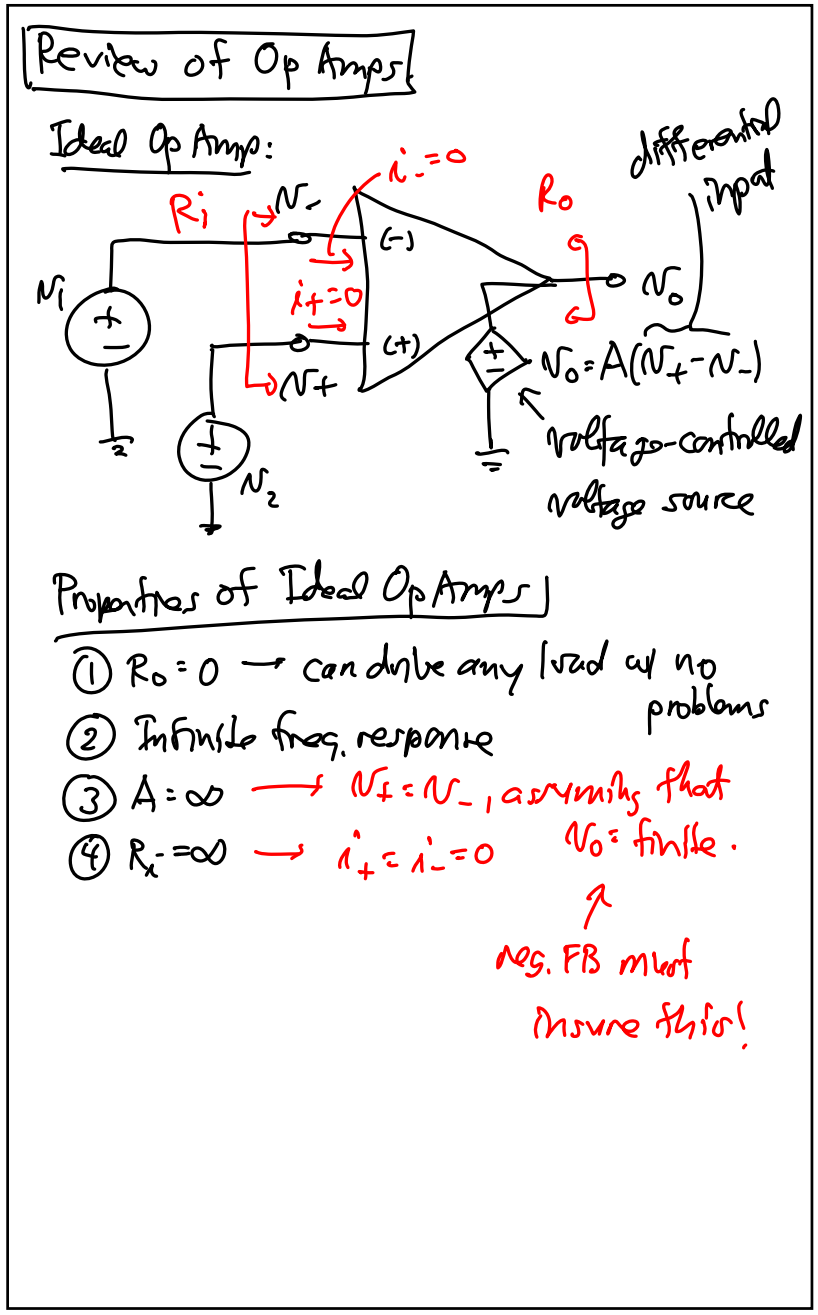
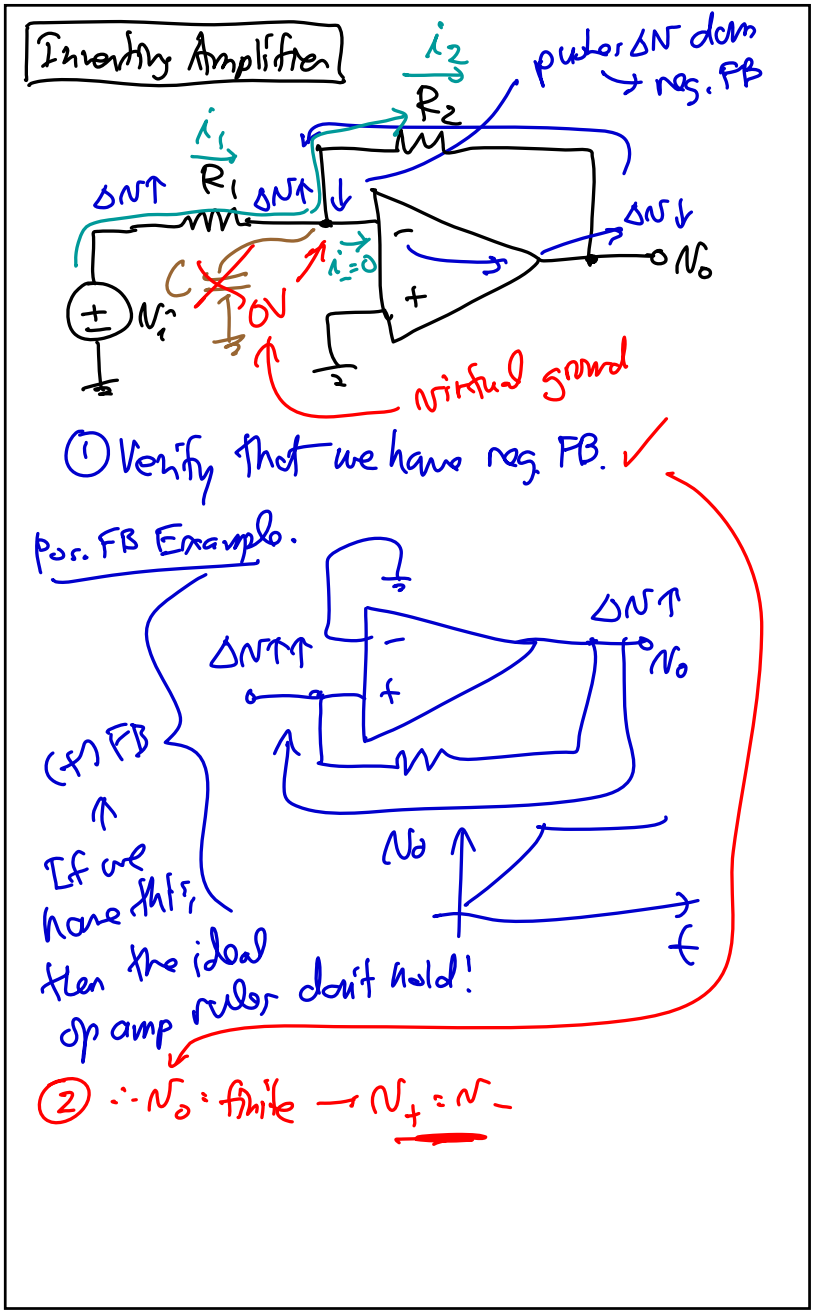
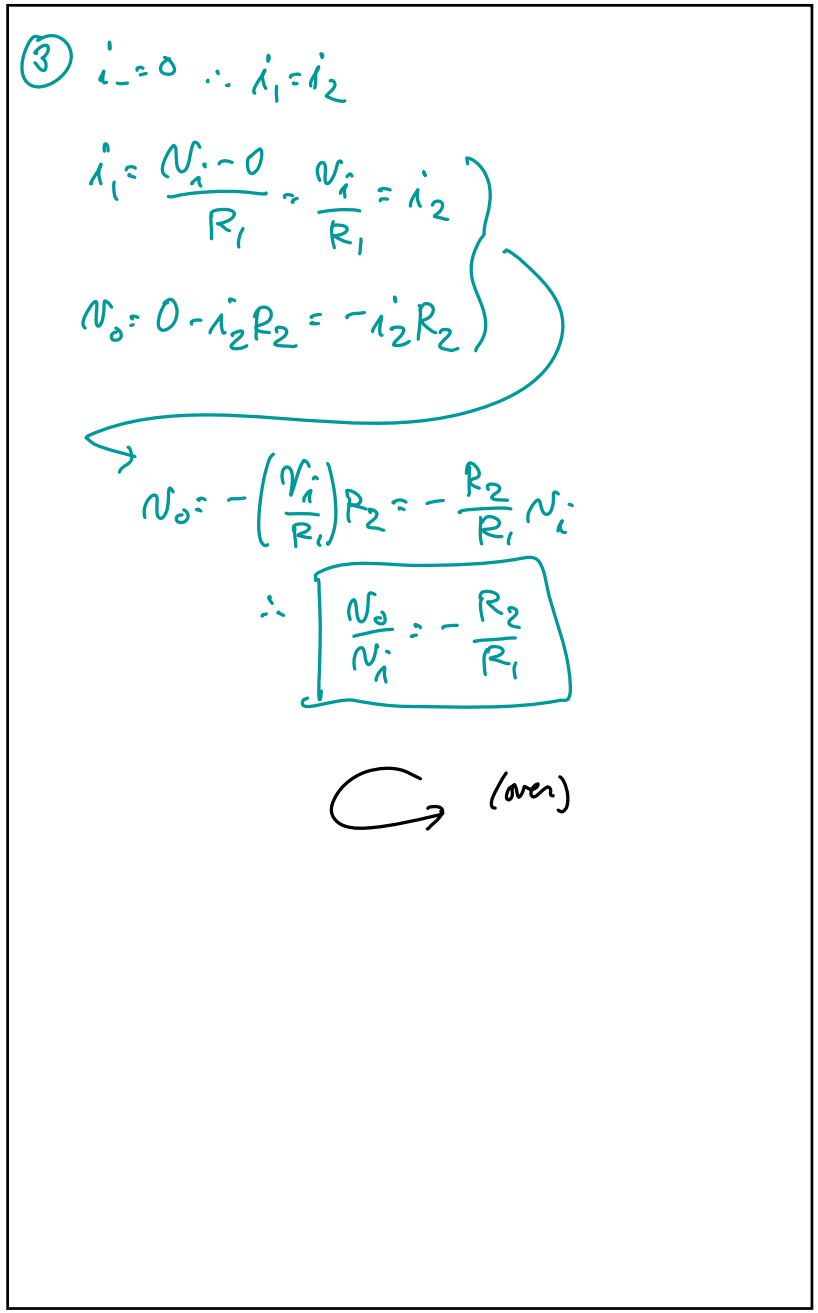
- Go though
  - Course information sheet
  - Syllabus
  - Grading Information and Policy
- Class account sheets handed out in class







- Non-Ideal Op Amps:
- Actual op amps, of course, are not ideal; rather, they …
  - Have finite gain, A_o
  - Have finite bandwidth, BW
  - Have finite input resistance, R_i
  - Have finite input capacitance, C_i
  - Have finite output resistance, R_o
  - Generates noise
  - Have input bias currents (because R_i is not infinite)
  - Have input offset currents and voltages
  - Have finite slew rate
  - Have finite output swing
- All of the above can be temperature dependent!
- A major objective of this class is understand what gives rise to the above non-idealities and to teach design strategies to get around them
- Then look at op amp usage examples using prepared pages