## DETAILED COURSE SYLLABUS *(TENTATIVE)*

The following comprises a **tentative** syllabus describing the material to be covered in this course. Material to be covered for each dated lecture is indicated along with the corresponding sections of the required textbooks, where R = Razavi's "Design of Analog CMOS Integrated Circuits" (i.e., the required text). How much of this material we can actually cover is a function of the degree of preparation of the average student in the class, which can vary depending upon which versions of EE 105 were taken.

| **Date** | | **Material to be Covered** | **HWs** | **Labs** |
|---|---|---|---|---|
| Jan. | 20 | Administrative Information, Introduction/Overview: Op Amps | | No Lab |
| | 22* | Dev. Operation & Models: BJT & MOS; R: Chpt. 2 | | |
| | 27* | Dev. Operation & Models, Inspection Analysis; R: Chpt. 2 | | No Lab |
| | 29 | 1-Tx Amps: Inspection Analysis; R: §3.1-3.4, §6.1-6.4 | | |
| Feb. | 3 | Multi-Tx Amps: Gain & Impedance Inspection Analysis; R: §3.5-3.6 | HW#1 Due | No Lab |
| | 5 | Multi-Tx Amps: Freq. Response Inspection Analysis; R: §6.5 | | |
| | 10 | Transistor Current Sources; R: §5.1-5.2 | HW#2 Due | Lab #1: 1-Tx MOS Amp. |
| | 12* | Diff. Amps; R: §4.1-4.4 | | |
| | 17 | Diff. Amps w/ Active Loads; R: §4.4, §5.3 | HW#3 Due | Lab #1 (cont.) |
| | 19 | Op Amps: 1-Stage; R: §9.1-9.2 | | |
| | 24 | Op Amps: 1-Stage; R: §9.1-9.2 | HW#4 Due | Lab #2-1 Diff. Pair Anal. & Des. |
| | 26 | Op Amps: 2-Stage; R: §9.3 | | |
| March | 3 | Op Amps: Gain Boosting; R: §9.4 | HW#5 Due | Lab #2-2 2nd Gain Stage Des. |
| | 5 | Op Amps: I/O Swing, Slew Rate; R: §9.7-9.8 | | |
| | 10 | Op Amps: Power Supply Rejection; R: §9.9 | HW#6 Due | Lab #2-3 Complete Op-Amp Anal. |
| | 12 | Stability of Amplifiers; R: §10.1-10.3 | | |
| | 17 | Stability and Compensation; R: §10.4 | HW#7 Due | Lab #3 CMOS Op-Amp Design Project |
| | ***19*** | ***Midterm Exam*** | | |
| | **24** | ***Spring Break – No Class*** | | |
| | **26** | ***Spring Break – No Class*** | | |
| | 31 | Stability and Compensation ; R : §10.5-10.6 | | Work on the Design Project |
| April | 2 | Fully Balanced Operational Amplifiers; R: §9.2, 9.6 | | |
| | 7 | Common-Mode Feedback; R: §9.6 | | Work on the Design Project |
| | 9 | Feedback Configurations; R: §8.1-8.2 | | |
| | 14 | Practical Feedback; R: §8.3 | HW#8 Due | Work on the Design Project |
| | 16 | Practical Feedback; R: §8.3 | | |
| | 21 | Single-Stage Feedback; R: §8.3 | HW#9 Due | Lab #4 ??? Feedback Amp. Design |
| | 23 | Stability and Root Locus; Handout | | |
| | 28 | Supply Independent Biasing ; R : §11.1-11.2 | HW#10 Due | |
| | 30 | Temperature Independent Biasing ; R : §11.3 | | |
| May | 5 | Bandgap Reference; R: §11.4-11.7 | HW#11 Due | |
| | 7 | Course Wrap-Up, Final Exam Information | | |
| | ***19*** | ***Final Exam: Tuesday, May 19, 5:00-8:00 p.m. (Exam Group15)*** | | |

* Dates with an asterisk next to them represent those days that I will not be in town. On these dates I will make appropriate arrangements for the lecture. These will likely entail make up lectures, possibly in the evenings.