

**Electronics II
EEET 221
Rochester Institute Of Technology
School of Engineering Technology**

Instructor: Prof. R. Cliver
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Office Hours: See MyCourses or office door (82-2156) for office hours. Wednesdays – cookies in my office every week!!! Fridays – join us at The Cliver House from 7 to 11pm for treats, games and study.
Prerequisite: Electronics I, DC Circuits

Course Description:

The operational amplifier is covered in detail. A wide range of its application are explained and explored, including many amplifiers and comparators. DC and AC characteristics are studied. Frequency responses of RC and op-amp circuits are covered.

Course Objective:

The student, upon completion, should be able to analyze and design common operational amplifier circuits.

Required Text:

Operational Amplifiers with Linear Integrated Circuits, 4th edition, by Stanley, Prentice Hall

Lecture Topics:

- 1) Introduction to Amplifiers: General Model, Cascading amplifiers, Decibels, frequency response, and Bode plots.
- 2) Ideal Operational Amplifier: Inverting Amplifier, Non-inverting and voltage follower.
- 3) Op-amp Applications: Current Source, Summer and Difference Amplifier, Differential Amplifier, and the Transimpedance Amplifier.
- 4) DC Performance: Input and output resistance, Effects of finite gain and Noise Gain.
- 5) AC Performance: Bandwidth, gain-bandwidth product, slew rate, rise-time, Noise, CMMR.
- 6) AC Applications: Differentiator, and the Integrator.
- 7) Comparator: Open loop and Positive feedback.

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Homework: Homework will be assigned each week and collected, in class, the following Monday. Please box answers and show a reasonable level of work. The coversheet is helpful but not required if the assignment is turned in on-time.

Quizzes: Quizzes will be given every Wednesday during the first 10 minutes of class. The quiz will be like one of the assigned HW problems from the previous week. Quizzes will be closed book, closed notes. Two quiz will be dropped. No make-up quizzes will be given.

Tests (1 and 2): Two tests will be given during the quarter. You may bring one 8.5"x11" sheet with hand written equations for use during Test 1. Two sheets in Test 2. The tests will be closed book. In case of emergency a reasonable attempt must be made to contact me. In these cases a make-up test can be scheduled but will not receive a grade greater than 70%.

Final: Three sheets are permitted for the Final. The final will be a closed book exam. There will not be a make-up for the final.

Evaluation:

Weekly quizzes	15%
Homework	15%
Final Exam	25%
Test 1 and 2	45%