Electronics I
EEET 211
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: DC Circuits

Course Description:

Develops the knowledge and ability to design active electronic circuits using diodes, bipolar and field effect transistors. Emphasis is placed on device characteristics and specifications, biasing circuits and transistor modeling. Applications of class A, B and D amplifiers including frequency response and thermal analysis are studied.

Required Text:

Electronic Devices and Circuit Theory , by R.L. Boylestad & Nashelsky, Prentice Hall; latest edition

Lecture Topics:

1) Semiconductor theory
    a. N- and P- type semiconductors
    b. PN Junction
    c. forward and reverse - biased junction
2) The diode as a circuit element
    a. the diode as a nonlinear device
    b. ac and dc resistance
    c. dc circuits containing diodes
    d. small-signal diode circuits
    e. rectifiers & dc power supplies
    f. diode switching circuits
    g. zener diodes
    h. light emitting diodes
    i. diode specifications
    j. junction capacitance
3) Introduction to bipolar junction transistors
    a. BJT operation
    b. common emitter characteristics
    c. common emitter output characteristics
4) BJT bias circuits: fixed bias and voltage divider bias
5) Field effect transistors
    a. dc characteristics and biasing
    b. JFET characteristics (n and p channel)
    c. enhancement and depletion MOSFET characteristics
    d. fixed, self and voltage divider biasing of a

6) JFET amplifier characteristics
    a. JFET ac model
    b. common source
    c. common gate and common drain amplifiers
    d. MOSFET ac model and amplifiers
    e. enhancement and depletion MOSFET biasing and graphical analysis of bias point
7) Low and high frequency response
    a. FET amplifier frequency response
    b. low frequency cutoff
    c. high frequency cutoff
8) Class B and D amplifiers
9) Thermal analysis

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%

Academic integrity statement: All conduct in this course is governed by the RIT Honor Code (P03.0) and RIT Student Academic Integrity Policy (D08.0).

Academic adjustments statement: RIT is committed to providing academic adjustments to students with disabilities. If you would like to request academic adjustments such as testing modifications due to a disability, please contact the Disability Services Office (DSO). Contact information for the DSO and information about how to request adjustments can be found at http://www.rit.edu/dso. After you receive academic adjustment approval, it is imperative that you contact the instructor as early as possible to work out whatever arrangement is necessary.

Title IX statement: Title IX violations are taken very seriously at RIT. RIT is committed to investigate complaints of sexual discrimination, sexual harassment, sexual assault, and other sexual misconduct, and to ensure that appropriate action is taken to stop the behavior, prevent its recurrence, and remedy its effects. Title IX rights and resources at RIT can be found at http://www.rit.edu/fa/compliance/content/title-ix