**EEL3300: Electronics I**

**Instructor: Dr. Petru Andrei**

Lecture hours: MW 3:05-4:20pm, Rm. 337  
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**Prerequisites:** EEL 3112 (with a grade of C or better).


**Office Hours:** MW 1pm-2:30pm or by appointment.

**Objectives and Outcomes:** Upon completing this course the student should be able to:

1. Analyze basic circuits using Ohm’s, Kirchhoff’s, and superposition laws, as well as Thevenin and Norton equivalent circuits.
2. Describe the nonlinear I-V characteristics of the p-n junction diode, and solve simple circuits containing two-terminal nonlinear elements.
3. Classify the electronic circuits made from two-terminal nonlinear elements, including clipping, limiting, and rectification, and analyze and design power-supply circuits.
4. Describe the I-V characteristics of three-terminal devices including field-effect transistor (FET) and bipolar junction transistor (BJT); identify the type of device given I-V characteristics.
5. Analyze and design basic circuits containing three-terminal devices, determine the relationship between the input and output voltages, and determine the device parameters.
6. Analyze and design single transistor amplifier circuits, and determine the small-signal gains of the amplifier using the small-signal model.
7. Identify and determine high and low-frequency capacitors in amplifiers, derive frequency response of basic amplifiers, and design an amplifier to meet frequency response criteria.

**Grading**

- Two Midterms: 50% (25% each)  
- Final Examination: 40% (comprehensive exam)  
- Homework: 10%  
- Attendance and Quizzes: 5% (bonus points, no credit will be awarded if student misses more than 3 lectures)

Grading scale: A: >90%, B: 80-89.9%, C: 65-79.9%, D: 50-64.9%, F: <50%

These breakpoints may be lowered slightly depending on overall class performance.

**Policy Statements:**

- Class attendance is mandatory. College and University rules allow only 3 unexcused absences for this course.
- Make-up exams available only for official excuses stated in the catalog or in the bulletin.
- Homework is due at the beginning of class on the announced date.
- Cellular phones and beepers must be turned off in the classroom.
- Coming in late or leaving early will be considered as absence of class.
- Students are bound by the honor code of their university. Violations of the honor code will be reported. Penalties include, but are not limited to 1) failing grade on the assignment and 2) failing grade for the course.
- Students with disabilities who need academic accommodations should: (1) Register with and provide documentation to the Student Disability Resource Center (SDRC); and (2) Bring a letter to the instructor indicating the need for accommodations and the specific type. This should be done within the first week of class. This syllabus and other class materials are available in alternative format upon request.