

A111- Electronics I

Fall 2014

Instructor: Michael Stucker
Email: mstucker@indiana.edu
Office: M257A (inside M257)
Office Phone: 856-4897
Office Hours: TBD

This Syllabus may be updated throughout the semester. For updates check Oncourse.

Course Objectives: At the end of this course students will be able to:

- analyze a simple audio amplifier utilizing vacuum tubes
- define the function of each component
- trace the DC, AC, and signal paths
- determine the resulting output given an input and a circuit

Supporting content includes: voltage and current, resistance and resistors, inductors and inductance, transformers, capacitors and capacitance, vacuum tubes and vacuum tube circuits.

Required Text: There is not required physical textbook for this course, readings will be provided through online resources delivered through Oncourse.

Additional Required Course Materials: Each student must purchase a lab kit to allow the hands-on portion of the course to be presented through the labs. These lab kits will be available for sale through the Jacobs School of Music Marketplace.

Communication: I will communicate with students in class and via email utilizing the Oncourse email system. Make certain that you are checking the official email address that is tied to Oncourse at least three times per week.

Homework: There will be regular individual and group assignments delivered through Oncourse to reinforce the previous material, or short assignments to clarify the reading. Some of these assignments are not listed specifically in the syllabus as they will be based on my assessment of your needs as we work through the material. Be sure to allow extra time for assignments as “computer problems” are not an excuse for late assignments.

Assignments: All lab assignments and homework assignments must be turned in to pass the course. All assignments must be turned in to Oncourse by midnight on the assigned day. Late assignments will lose 10 points (a letter grade) for each week they are late.

Exams: Exams will be delivered through Oncourse and must be completed by the due date listed.

Final Project: All students will present an in-depth circuit analysis in the last week of classes. Details and the assigned circuit will be presented by the time of the first exam.

Reading: Readings must be completed by the assigned date. As many of the homework assignments are included in the reading you will also have late homework assignments if you are behind on the reading.

What is Expected of Students: It is expected that interactive learning and teaching will enrich the experience of all students, and that each student will work in partnership with the professor to create a positive learning experience for all. Student engagement is fundamentally necessary for an effective learning experience, and includes contributions to debate and discussion (if any), positive interactive learning with others, and an enthusiastic attitude towards inquiry. Everyone is expected to be a positive contributor to the class learning community, and students are expected to share the responsibility of teaching each other.

Statement of Understanding between Professor and Student: Every student must respect the right of all to have an equitable opportunity to learn and honestly demonstrate the quality of their learning. Therefore, all students must adhere to a standard of academic conduct, demonstrating respect for themselves, their fellow students, and the educational mission of the University. The Department fully supports all university policies and procedures regarding academic misconduct (cheating, fabrication, plagiarism, interference, violation of course rules and facilitating academic dishonesty) as outlined in the Code of Students Rights, Responsibilities and Conduct. If it is found that a student has committed an act of academic misconduct, a report will be filed with the Office of Student Ethics, and a copy will be placed in the student's academic record.

Final grades: final grades will be figured from the following:

30%: Exams (2 including Final)

15%: Homework

20%: Lab assignments

15%: Group and Discussion work, Assignments and Participation

20%: Final Project

**note: all assignments must be turned in before noon on Friday of the last week of classes to receive a passing grade in the course

<Course Schedule on page 3>

A111 SCHEDULE

Week	Monday Date	Overview	Lab	Reading
Unit I				
1		Course introduction and basics of electricity	Intro to lab procedures	Unit 1, pages 1-6
2		Voltage and current	Lab #1-1: Dual Light Switch	Unit 1, pages 7-11
3		Voltage and current	Lab #1-2: VOM and Oscilloscope	Unit 1, pages 12-15
Unit II: Resistance and Resistors				
4		Resistance and resistors	Lab #2-1: Resistors	Unit 2, pages TBD
5		Resistance and resistors	Lab #2-2: Voltage Dividers	Unit 2, pages TBD
Unit III: Inductance, Inductors, and Transformers				
6		Inductance, inductors and transformers	Lab #3-1: Simple Inductive Filters	Unit 3, pages TBD
7		Inductance, inductors and transformers	Lab #3-2: Virtual Inductors	Unit 3, pages TBD
8		Exam #1		Unit 3, pages TBD
Unit IV: Capacitance and Capacitors				
9		Capacitance and Capacitors	Lab #4-1: Capacitors	Unit 4, pages TBD
10		Capacitance and Capacitors,	Lab #4-2: Simple Passive Filters	Unit 4, pages TBD
11		Capacitance and Capacitors	Lab #4-3: AC and DC Paths	Unit 4, pages TBD
Unit V: Vacuum Tubes				
12		Vacuum tubes	Lab #5-1: Vacuum Tubes	Unit 5, pages TBD
13		Vacuum tubes	Lab #5-2: Tube Amplifier	Unit5, pages TBD
14		No Class (Thanksgiving Break)		
Unit VI: Circuit Analysis				
15		Circuit Analysis		Unit 6, pages TBD
16		Circuit Analysis Final Project Circuit Analysis Due		
17		Final Exam		