# EE 201 – ELECTRONIC CIRCUITS

IOWA STATE UNIVERSITY DEPT. OF ELECTRICAL AND COMPUTER ENGINEERING

SPRING 2018

**Lecture:** Monday, Wednesday, and Friday, 10:00a – 10:50a in Marston 2200

**Labs:** All labs will be held in Coover 2014
Section A: Tuesday 2:10p – 5:00p
Section B: Thursday 8:00a – 10:50a
Section C: Wednesday 2:10p – 5:00p

**Required Text:** Nilsson and Riedel, Electric Circuits, 10th Ed.

**Course Website (under construction):** Canvas, https://www.iastate.edu -> Sign Ons -> Canvas

**Instructor:**
Cheng Huang
Email:chengh@iastate.edu
Office: 2124 Coover Hall

**Office Hours for Instructor and TA:** TBD

**Prerequisites:**
Credit or enrollment in Math 267 and Phys 222.

**Course Description:**
This course is an introduction to electronic circuit design and analysis. This class is primarily organized into two parts. The first half of this class will focus on DC circuit analysis including Ohm's law, Kirchhoff's laws, node voltage analysis techniques, mesh current analysis techniques, and Thevinen/Norton equivalent circuits. The second half of the semester will focus on AC circuit analysis including step and transient responses, frequency response of filters, and AC power calculations. Within this context, this class will discuss several basic circuit components including resistors, inductors, capacitors, op-amps, and diodes.

**Lectures:**
Lecture notes will be posted to the Canvas course website each day after class. During lectures, the instructor will work different example problems in class. The solutions to these problems may not always be posted and it is the student's responsibility to attend class in order to see the complete solution.

**Homework:**
Homework will be assigned on a weekly basis and it is important to complete the assigned problems to solidify your understanding of the concepts covered in lecture. Weekly homework assignments will be posted to the class website on Monday of each week and will be due the following Monday by midnight in

the instructor's office. Please put your lab section as well as your name on each homework assignment. Working in groups on the homework assignments is encouraged, but all submitted work should be the students' own.

Homework assignments will be graded in the following manner. Homework will be graded out of 10 points. For each homework, one problem will be randomly selected and graded for correctness. This will be worth 5 points. The remaining 5 points will come from completeness with the following scale:

0 points – No problems completed

1-4 points – Some of the problems are complete

5 points – All problems are complete

**Labs:**

There will be weekly lab assignments beginning the second week of the semester. During the first lab meeting, each student must pick up a lab kit from the TA. Students will work in groups of two and attendance and participation in the lab are required. Each group will be required to submit a single lab report which will be due the following lab period. Report templates will be provided for each lab, and lab reports should be submitted ~~online~~ to the TAs during the following lab.

Each lab will be graded out of 10 points, 5 points for the written report and 5 points for attendance/participation. The grade for the written report is assigned to every member of the group. The attendance portion of the grade is assigned individually. If the student is more than 10 minutes late to the lab, then 1 point will be deducted from the attendance score, after which 1 point is deducted for every 30 minutes that the student is late. In addition, points may be deducted for continued non-participation during the lab (based on the TA's observations).

At some point in the last half of the semester, there will be a laboratory exam. More details will be given.

**Exams:**

There will be a total of four in-class exams during the semester, three midterm exams and a cumulative final exam. The three midterm exams are tentatively scheduled to take place on the 5th, 9th, and 13th week of the semester, and are subject to change. Actual dates will be announced during lecture. The date for the final exam is determined by the Registrar's Office. Students will be allowed to bring one doubled-sided page of hand-written notes to each of the midterm exams and two doubled-sided pages of hand-written notes to the final exam. Otherwise all exams are closed-note and closed-book. The use of wireless devices is strictly prohibited during exams.

Students will be able to drop their lowest midterm exam score.

**Quizzes:**

Weekly quizzes will be given every Friday during the beginning of lecture. Quizzes will be closed-book and closed-note, will cover material from that week's lectures, and will take approximately 10 minutes or less.

No make-up quizzes will be given but the two lowest quiz scores will be dropped.

**Late Policy**:

No late homework, labs, quizzes, or exams will be accepted without prior approval from the professor.

**Grading:**

This final grade for this course will have the following breakdown. Please note, the labs are an important component of this course and as such, *a passing grade in the labs is required for a passing grade in the course.*

- Weekly Homework: 15%
- Weekly Quizzes: 15%
- Laboratories: 25%
- Laboratory Exam: 5%
- Midterm Exam: 25% (12.5% each)
- Final Exam: 15%

**Lab Safety:**

This class has a substantial hands-on laboratory section. Students will be using expensive, sensitive, and potentially hazardous test equipment. Safety in the lab is a number one priority for students and instructors and to ensure a safe laboratory experience, a brief safety presentation will be given the first day of lab. It is mandatory that all students attend this presentation. Moreover, it is expected that students follow any and all posted safety guidelines. For reference, a copy of the University Laboratory Safety Manual can be found at:

`www.ehs.iastate.edu/sites/default/files/uploads/publications/manuals/labsm.pdf`

**Students with Disabilities:**

If you have a documented disability and anticipate needing accommodations in this course, please make arrangements to meet with me soon. Please request that a Disability Resources staff send a SAAR form verifying your disability and specifying the accommodation that you will need.