Department of Electrical and Computer Engineering

University of Wisconsin-Madison

**ECE 270**

# Electronic Circuits I

Syllabus and Policies

**Fall 2024**

Last updated 8/29/2024 1:56 PM

Mark Allie

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| Instructor: | **Mark Allie**, 1538 Engineering Hall  Ph: 262-3618 email: [allie@wisc.edu](mailto:allie@wisc.edu) |
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| Credits: | 1 |
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| Prerequisites: | ECE210 |
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| Course Credit Hour PolicyGoals: | This class meets for three 50 minute or two 75 minute class periods every other week over the semester and carries the expectation that students will work on course learning activities (reading, writing, problem sets, studying, etc) for about 3 hours out of the classroom for every week.  This course focuses on Kirchoffs laws, Thevenin equivalence, RC and RL timing and introductory op-amp functionality. |
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| Topics: | Simple use of Kirchoff’s Laws  Not so simple use of Kirchoff’s Laws  Thévenins Theorem  RC and RL Transient Response  Basic Op-Amp Parameters  Hardware Design using Passive Components and an Op-Amp |
| Learning Outcomes | 1. Understanding and measuring voltage and current in resistor networks. 2. Using Thévenin Equivalent circuits. 3. Measuring charging and discharging voltages and currents in inductors and capacitors.  4. Measuring basic op-amp capabilities and the real-world limitations. 5. Designing low pass filters.  6. Use LED’s effectively.  7. How to use an op-amp as a comparator. |
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| Grading Policy: | 20% Pre-lab Assignments  40% Lab Assignments  40% Bench Exam |

## Course Conduct

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| Timetable |  |
| Lab: | M/W/F 2:25PM-3:15PM or T/TR 2:30PM-3:45PM |
| Location: | Engineering Hall 3654 (Plexus Lab) |
|  |  |
| Instructor |  |
| Name: | Mark Allie – [allie@wisc.edu](mailto:allie@wisc.edu) |
| Office hours: | See Class Website |
|  |  |
| Teaching Assistant(s) |  |
| Name: | Makbule Kubra Eryilmaz - [korkmaz2@wisc.edu](mailto:korkmaz2@wisc.edu) |
| Office Hours: | See Class Website |

### Required Text / Material

* All written materials required for this course can be found on the Canvas webpage.
* All required parts and equipment will be distributed during class sessions.

### Course Organization

Each Lab will have a pre-lab assignment due before the lab starts.

There will be a lab report assignment due at the end of the each lab session.

There will be one bench exam at the end of the lab sessions.

Class time will be used to interact with the teaching staff. This is when you can ask questions about the labs while performing the experiments. You can use the Plexus Lab (3654EH) anytime it is available whether or not there are teaching personnel in the lab. Attendance will not be taken during lab. You do not have to attend the lab during the meeting time.

### Student Responsibility

You are responsible for all pre-lab and lab report reading material unless otherwise specified by the instructor. You are responsible for performing the lab experiments individually or in a group. When in a group you need to be present during the execution of the experiments. You are responsible for individually submitting pre-lab and lab reports for each lab experiment.

Unless otherwise specified, your work for this course is to be written by you. **In particular, the answers to questions written wholly or partially by other students is specifically prohibited.**

### Code of Conduct

Students are expected to always conduct themselves in an ethical manner. Students should read the syllabus and be familiar with the rules related to attendance, deadlines, and academic misconduct.

If a student engages in academic misconduct or assists another student in doing so, they will be subject to UWS-14, the University of Wisconsin-Madison Academic Misconduct Policy & Procedures. As stated UWS-14, this can include a zero grade on the assignment or a failing grade in the course, as well as a formal letter to the Dean of Students Office, to be placed in the student’s record. If a student already has such a letter on file, the Dean of Students Office may elect to take further action, including potential suspension or even expulsion.

Students are encouraged to read UWS-14 for more detailed information, including the university’s definition of misconduct, a list of possible sanctions, and a description of the process for handling academic misconduct: <http://students.wisc.edu/doso/acadintegrity.html>

Examples of Activities Considered to be Academic Misconduct:

* Copying an assignment or solutions from a previous semester, even if the assignment permits collaboration between classmates.
* Copying any part of an individual assignment from another student.
* Allowing another student to copy any part of your work for an individual assignment.
* Attempting to gain credit for a group assignment without making a fair contribution to that assignment.
* Allowing other student’s names to be included as collaborators on a group assignment to which they made minimal or no contribution.
* Telling another student the answer to a question on an individual assignment.
* Telling another student step-by-step specific instructions as to how to solve a question on an individual assignment.
* Attempting to communicate with other students during an exam.
* Attempting to gain access to or an extension for a graded assignment under false pretenses.

Examples of Activities **NOT** Considered to be Academic Misconduct:

* Discussing the concepts covered in an individual assignment with others, regardless of whether they are in the same group, course or not.
* Searching for additional materials online to help explain course concepts.
* Explaining the concept covered in an individual assignment to another student in the class, without providing the answer to the question that is causing difficulty (teaching is OK).

### Pre-Lab Reports (20% of Grade)

Pre-Lab report assignments are submitted by every student on the canvas website.

### Lab Reports (40% of Grade)

Lab report assignments are submitted by every student whether or not you executed the lab in a group or alone.

All lab work that you submit in this course is expected to be the product of your group. Evidence indicating copying of work from others or other inappropriate cooperation will be dealt with as academic misconduct.

Late pre-lab or lab assignments will receive no credit except under extreme non-academic circumstances. Both the instructor and teaching assistant have lab time office hours for discussing questions on the lab experiments and other course subjects; appointments can be made for other times.

Any issues with pre-lab and lab grading must be resolved with the TA or instructor.

### Assessment (40% of grade)

There will be one (1) in-person, open book assessment used to evaluate individual performance. Assessments will be administered in paper form and will be submitted in hard copy form.

This assessment will take place during normally scheduled lab time.

Assessment questions will be based on material from the ECE230 theoretical material, pre-lab, lab experiments and in class activities.

ECE270 Staff will be available to help answer questions related to the exercises from during lab time.

Textbook

There is no official textbook for this class. There are pre-lab and lab report readings posted to the course website.

### Grading

Grades will be assigned based on the following grading thresholds.

A 90

AB 85

B 80

BC 75

C 70

D 60

**To receive a passing grade in this class, you must achieve a minimum grade of 50 percent on your bench assessments AND a minimum of 60 percent on your cumulative grade.**

Partial credit will be given when appropriate, depending on the nature of the question. Thus, in the same test, some questions will likely be graded on an all-or-nothing basis and others on a partial credit basis.

Any questions about the grading must be submitted to the instructor within one week following the return of the materials. It is your responsibility to examine returned materials promptly.

Communications with Instructional Staff

All questions about class content or clarifications of lab problems are best submitted in person during class time and via email.

***Your constructive comments and suggestions on how the course could be improved are always welcomed and are your opportunity to make the class more interesting and useful to you and future students.***

Academic Calendar and Religious Observances

View the full [academic calendar](https://secfac.wisc.edu/academic-calendar) in addition to information about religious and election day observances. Students are responsible for notifying instructors within the first two weeks of classes about any need for flexibility due to [religious observances](https://policy.wisc.edu/library/UW-880).

Establishment of the academic calendar for the University of Wisconsin–Madison falls within the authority of the faculty as set forth in [Faculty Policies and Procedures](https://policy.wisc.edu/library/UW-801#Pol801_1_20). Construction of the academic calendar is subject to various rules and laws prescribed by the Board of Regents, the Faculty Senate, State of Wisconsin and the federal government. Find [additional dates and deadlines for students](https://registrar.wisc.edu/dates/) on the Office of the Registrar website.

Accommodations for Students with Disabilities

The University of Wisconsin–Madison supports the right of all enrolled students to a full and equal educational opportunity. The Americans with Disabilities Act (ADA), Wisconsin State Statute (36.12) and UW–Madison policy ([UW-855)](https://policy.wisc.edu/library/UW-855) require the university to provide reasonable accommodations to students with disabilities to access and participate in its academic programs and educational services.

Faculty and students share responsibility in the accommodation process. Students are expected to inform faculty of their need for instructional accommodations during the beginning of the semester, or as soon as possible after being approved for accommodations. Faculty will work either directly with the student or in coordination with the [McBurney Disability Resource Center](https://mcburney.wisc.edu/) to provide reasonable instructional and course-related accommodations. Disability information, including instructional accommodations as part of a student’s educational record, is confidential and protected under FERPA.

Course Evaluations

Students at the University of Wisconsin–Madison have the opportunity to evaluate their learning experiences and the courses they are enrolled in through course evaluations. Many instructors use a [digital course evaluation tools](https://kb.wisc.edu/luwmad/81069)to collect feedback from students. Students typically receive notifications two weeks prior to the end of the semester requesting that they complete course evaluations. Student participation is an integral component of course development, and confidential feedback is important. UW–Madison strongly encourages student participation in course evaluations.

Diversity and Inclusion

[Diversity](https://diversity.wisc.edu/) is a source of strength, creativity, and innovation for the University of Wisconsin–Madison. We value the contributions of each person and respect the profound ways their identity, culture, background, experience, status, abilities, and opinion enrich the university community. We commit ourselves to the pursuit of excellence in teaching, research, outreach, and diversity as inextricably linked goals. UW–Madison fulfills its public mission by creating a welcoming and inclusive community for people from every background – people who as students, faculty, and staff serve Wisconsin and the world.

Mental Health and Well Being

Students often experience stressors that can impact both their academic experience and personal well-being. These may include mental health concerns, substance misuse, sexual or relationship violence, family circumstances, campus climate, financial matters, among others.

UW–Madison students are encouraged to learn about and utilize the university’s mental health services and/or other resources as needed. Student can visit [uhs.wisc.edu](https://www.uhs.wisc.edu/) or call University Health Services at (608) 265-5600 to learn more.

Privacy of Student Records and Use of Audio Recorded Lectures

Lecture materials and recordings for this course are protected intellectual property at UW–Madison. Students enrolled in this course may use the materials and recordings for their personal use related to participation in the course. Students may also take notes solely for their personal use. If a lecture is not already recorded, students are not authorized to record lectures without permission unless they are considered by the university to be a qualified student with a disability who has an approved accommodation that includes recording. [Regent Policy Document 4-1]

Students may not copy or have lecture materials and recordings outside of class, including posting on internet sites or selling to commercial entities, with the exception of sharing copies of personal notes as a notetaker through the McBurney Disability Resource Center. Students are otherwise prohibited from providing or selling their personal notes to anyone else or being paid for taking notes by any person or commercial firm without the instructor’s express written permission. Unauthorized use of these copyrighted lecture materials and recordings constitutes copyright infringement and may be addressed under the university’s policies, UWS Chapters 14 and 17, governing student academic and non-academic misconduct. View [more information about FERPA](https://registrar.wisc.edu/ferpa-facstaff/).