



Instructors:	Name:	Dr. Jean Mohammadi-Aragh	Mr. Chase Robinson
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	Office Hours:	Thursdays 4:00-4:50pm	Tuesdays 1:00-1:50 pm
	Office:	Simrall 333	Simrall 403

Notes on Office Hours: ***We want to meet with you!*** We are available in our Simrall offices during our office hours unless prior notice has been sent out. Additionally, if you need an alternate meeting time, email 2-3 times that would work for your schedule and we will schedule an appointment.

Lecture Time: Section 01 meets Tuesdays, 2:00-3:50pm in Simrall Auditorium (room 100)
Section 03 meets Thursdays, 2:00-3:50pm in Simrall Auditorium (room 100)

Lab Times: Lab time is assigned based on the enrolled lab section and meets in Simrall 130

Prerequisites: N/A

Corequisites: Credit or registration in CSE 1284

Textbook: No required textbook

Software: **Required** - MATLAB and Simulink Student Suite (latest Student version) – Note that this software costs \$99 (one-time cost) and will be used throughout your ECE degree program (all four years). Purchase from MathWorks.

Hardware: Starkville campus - parts and tools are distributed in face-to-face lab sessions

Website: canvas.msstate.edu

Course Description and Objectives

(Prerequisite: Credit or registration in CSE 1284). Two hours lecture. Three hours laboratory. Introduction to the profession, college, department, and program. Survey of ECE technical knowledge and tools crucial in early ECE courses. Introduction to engineering design, teaming, and technical communication.

After successfully completing this course, the students will be able to:

- i. Demonstrate basic knowledge of curriculum structure and ECE career paths
- ii. Explain and apply basic concepts needed for success in ECE
- iii. Demonstrate basic laboratory skills and simulation tool knowledge necessary for ECE design activities



- iv. Demonstrate a basic understanding of the practices involved in the development of effective informative and persuasive communication
- v. Summarize and communicate salient points from a contemporary engineering publication
- vi. Evaluate sources and evidence for technical communication

Methods of Evaluation

Your grade will be calculated using the following breakdown and scale.

Grading Breakdown		Grading Scale	
Assignment Type	Max Pts Possible	Grade	# Points Earned
Classwork & Homework	530 pts	A	900-1000
Laboratory	350 pts	B	800-899
Quizzes	120 pts	C	700-799
TOTAL	1000 pts	D	600-699
<i>+Extra Credit</i>	<i>as announced</i>	F	<600

Final Exam

According to the University exam schedule for Fall 2024, the final exam time for section 01 (Tuesday lecture) is Thursday December 12th from 12-3pm, and for section 03 (Thursday lecture) is Wednesday December 11th from 3:30-6:30pm.

ECE 1013 has no in-person final exam. However, there may be final course assignments that are due / must be submitted to Canvas no later than the end of the final exam period.

Course Grading Policies

Instructor-provided class materials are the only resources allowed while taking quizzes. **All quizzes, homework, laboratories, and presentations are INDIVIDUAL assignments.** If you share quiz questions, provide the quiz password, copy another student's work, or allow another student to copy your work, then you will be referred for an Honor Code violation.

You may use a calculator, lecture notes, lecture videos, and other instructor-provided material when taking quizzes. **No other outside resources are allowed.** Resources such as Chegg or any other



unauthorized resource used during the completion of a quiz or homework is considered a violation of the Mississippi State University Honor Code.

Preparation, self-regulated learning, and participation are expected and required throughout the semester. These skills are demonstrated through attendance in lecture, consistent log ins to the Canvas site, frequent email reading and responding, viewing course videos, and/or timely submission of assignments.

Due dates matter. Assignments must be turned in on the due date by the time specified. **Except in cases of an excused absence as defined in Academic Operating policy 12.09, assignments that are late receive no credit.** For excused absences, contact the instructor prior to the absence, if possible, or as soon as possible after the absences if the nature of the absence prevents prior notice. For other unusual emergency situations beyond the student's control (e.g., housing disruption, family emergency), deadline extensions may be requested via email and may be granted solely based on the instructor's discretion.

AI Policy: Permitted for Select Assignments in this Course *with Attribution*

Generally, students are **NOT** permitted to use generative AI tools such as ChatGPT for assignments except those authorized specifically by their instructor in the assignment directions. The unauthorized use of a generative AI tool to complete an assignment constitutes academic dishonesty and may be reported as an Honor Code violation. All submitted work will be filtered through Turnitin's AI writing detection tool, and other screeners may also be used.

For assignments in which generative AI has been explicitly permitted by your instructor, students must give credit and cite any AI-generated material according to citation-specific rules (e.g., IEEE style), including in-text citations, quotations, and references. Any work with more than the allowable percentage of AI-generated material specified in the assignment instructions, if applicable, could be reported as an Honor Code violation. Students must also include the following statement in assignments to indicate use of a generative AI tool: "The author(s) acknowledges the use of [Tool Name] in the preparation of this assignment for [brainstorming, grammatical correction, citation, etc.]." Failure to acknowledge use of generative AI could be reported as an Honor Code violation.

University Policies

The Mississippi State University Syllabus contains all policies and procedures that are applicable to every course on campus and online. The policies in the University Syllabus describe the official policies of the University and will take precedence over those found elsewhere. It is the student's responsibility to read and be familiar with every policy. The University Syllabus may be accessed at any time on the Provost

website under Faculty and Student Resources and at <https://www.provost.msstate.edu/faculty-student-resources/university-syllabus>



LECTURE TOPICS (30 contact hours)

- I. Overview of ECE department (4 hours)
 - a. History of MSU, the ECE Department, and the ECE profession
 - b. ECE advising procedures, ECE student accounts, and network resources
- II. ECE career trajectories, cooperative education, graduate school, and research (3 hours)
- III. Introduction to EE and CPE design (5 hours)
 - a. Problem Identification
 - b. Research
 - c. Brainstorming
- IV. Technical Communication (9 hours)
 - a. Email writing
 - b. Project documentation
 - c. Designing and presenting effective oral communication
 - d. Informative vs. Persuasive communication
 - e. Software to support technical communication
- V. Survey of electronic circuits (4 hours)
 - a. Charge, current, voltage, energy
 - b. Resistance, and series and parallel resistors
 - c. KVL and KCL
- VI. Survey of mathematics principles required for early ECE courses (2 hours)
 - a. Complex numbers
 - b. Matrices
- VII. ECE simulation tools (3 hours)
 - a. Introduction to ECE simulation tools
 - b. Examples of solving ECE problems with simulation tools
 - c. Debugging engineering problems with simulation tools

LABORATORY TOPICS (30 contact hours)

- I. Lab safety, engineering design process (3 hours)
- II. Introduction to through-hole soldering (3 hours)
- III. Advanced through-hole soldering (3 hours)
- IV. How Stuff Works presentations (3 hours)
- V. Introduction to SMT soldering (3 hours)
- VI. Electronic wiring diagrams and circuit schematics, basic electronic circuit components (3 hours)
- VII. Advanced SMT soldering (3 hours)
- VIII. Using Arduino #1 (LEDs, switches, GPIO, serial communications) (3 hours)
- IX. Using Arduino #2 (timers, PWM, A/D, interrupts) (3 hours)
- X. Using Arduino #3 (complex sensors, I2C, SPI, motor control) (3 hours)



ADDITIONAL ECE 1013 CLASS INFORMATION

Tools

The hands-on lab component of ECE 1013 (and the ECE degree program) involves prototyping, PCB stuffing, and testing. As tools tend to disappear in the lab environment, the department does not provide basic electronics hand tools. You will acquire the nucleus of your personal electronics tools set in this course. You will likely add one or more tools to your toolbox every semester as you progress through the program.

You will want to obtain a locking plastic toolbox in which to store your tools and parts.

Students registered for ECE 1013 on the Starkville campus will need to pick up tools and parts in-person during the scheduled lab time approximately 3-4 times during the semester. Students registered for ECE 1013 on the Distance campus will need to purchase the required tools and parts. A parts lists is available on the EE Distance website.

Expectations for the ECE 1013 Classroom and Communication

The following policies for course communication apply for **ALL students**:

- You are required to check your MSU email account regularly. This is considered an official means of communication by MSU for all students.
- The course materials will be accessed through Canvas.
- Assignment submissions including quizzes will utilize Canvas unless otherwise specified by the instructor.
- You are required to have access to a computer that connects to the internet.
- Students should direct correspondence to the instructor directly related to the class via the mail feature in Canvas.
- Students should not discuss specific exam questions.
- Students are encouraged to discuss homework together in a group, but the assignment should be completed individually.

Minimum Technology Requirements

The following minimum technology requirements are necessary **for all students** to complete the course:

- Computer with web browser, Microsoft Office, and Adobe Reader
- Internet access



- Webcam and microphone (computer or smartphone) to upload video responses to assignments or participate in virtual meetings / office hours.
- Video recording and editing software (Camtasia is available to download free from MSU ITS)

Assignment Submissions

Submit assignments well before the deadline! Engineering is often more about creating an efficient process than the final product, and engineering education is very similar. ECE 1013 is a large class with many assignments. In order to be efficient, ECE 1013 uses the Canvas classroom management system for almost all “classroom transactions”: assignments are made via Canvas, homework assignments are submitted to Canvas, quizzes are administered and graded by Canvas, etc. It is impractical or impossible to adjust student submissions or computer-based grading on a student-by-student basis. Therefore, **it is YOUR responsibility to ensure that your submissions are in the right format and have been accepted by the Canvas system before the scheduled deadline.** If you have an issue submitting files to the Canvas system before the scheduled deadline, your only remedy is to submit an official grade concern (see the grade concern policy on Canvas). However, note that grade concerns without evidence of an unusual or exceptional circumstance will typically not fare well.

Missed quizzes. All quizzes are provided in the online environment and, in most cases, available for multiple days. ***There will be no make-up quizzes offered.*** In cases of true emergency, the instructor may temporarily reopen an quiz if the instructor is notified of the emergency within 24 hours of the missed quiz, **and** it is reasonably feasible, **and** documentation of the circumstance is produced upon the instructor’s request.

Attendance Policies

Attendance Policy for face-to-face instruction

Students registered in face-to-face sections are expected to attend all class meetings. Attendance is verified through card scanners; if you fail to scan your ID, you will be marked as absent.

Students who miss lecture for any reason are expected to discuss missed in-class work with their classmates, and, if available, watch recorded lecture videos. Note that lectures are not always recorded. Students are responsible for all material covered in lecture including any in-class announcements.

Please refer Academic Operating policy 12.09.

(<http://www.policies.msstate.edu/policypdfs/1209.pdf>Links to an external site.), regarding attendance expectations and accommodations. Note that official, university-approved and documented absences are not subjected to attendance penalties. It is the student’s responsibility to initiate a request of

making up course work in a timely manner. Unless impractical, all communication regarding official, university-approved and documented absences and make-up work should take place prior to the absence.

UNIVERSITY POLICIES

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