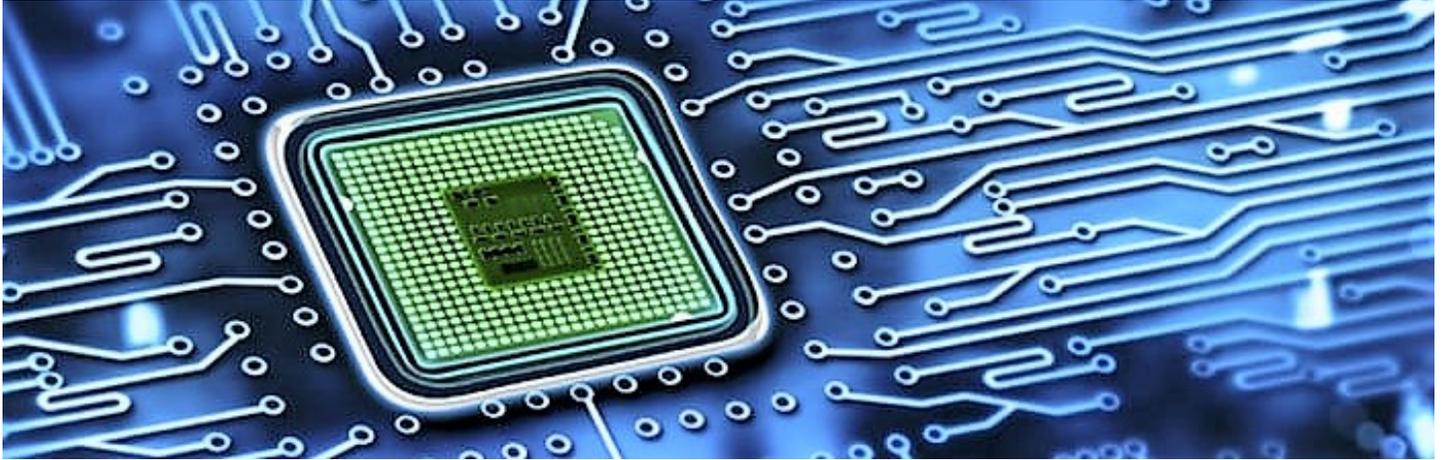


S

TEE 2300: Electronic Fundamentals - Course Syllabus



Start Here (<https://usu.instructure.com/courses/546617/pages/start-here>)



Syllabus (<https://usu.instructure.com/courses/546617/assignments/syllabus>)



Modules (<https://usu.instructure.com/courses/546617/pages/modules>)



More Resources (<https://usu.instructure.com/courses/546617/pages/more-resources>)



✓ What's Next?

When you are done with the syllabus, please click on the Modules tab near the top right of your screen to begin the course! 🏠

🗨️ Course Information

Course Title: Electronic Fundamentals

Course Number: TEE 2300

Semester Credits: 4

Instructor Name: Cory Ortiz

Contact Information:

Office: Industrial Science 112C

Email: [REDACTED]

Office Hours:

Times available by appointment

Course Schedule:

Dates: August 27, 2019 - December 10, 2019

Schedule: TR 8:30-10:15

Location:

Classroom: IS 116

Lab: IS 104

Final Exam Date: Online - Due Tuesday, December 10th, 2019 by NOON

Inclement Weather Policy

I commute from Ogden everyday for class. That being said, every now and again, inclement weather will interfere with my ability to commute safely. This is more of an issue regarding the winter driving conditions that exist in Sardine Canyon. During periods of inclement weather, I may delay or cancel class for my safety. I will notify class of cancellation no later than 7:30 am before class. If class needs to be delayed, a notice will be sent out no later than 7:30 am before class. This notice will be sent out via canvas so make sure that your canvas notifications settings are set appropriately.

Fees

TEE 2300 has a \$28 lab fee which is paid along with your tuition and student body fees via Touchnet. This fee is used to offset the cost of consumables, including: materials, tools, and damaged components.

You will be required to build an electric motor with home furnished supplies. This can be done on the cheap (for as little as 1\$), or expensively.

Course Description

This class is the project-based study of electronics theory and application, including circuits, electronic components, Ohm's Law, Kirchhoff's Laws, Watt's Law, power supplies, digital electronics, timing, data acquisition and controls, and entry-level programming and automation.

Course Objectives

By the end of this course, you will be able to:

1. Maintain a clean and safe laboratory environment at all times
2. Diagnose and troubleshoot electrical circuits
3. Effectively engage with other students in a collaborative setting
4. Explain the fundamental concepts of electricity
5. Communicate using standard electronic schematics
6. Analyze circuits using Ohm's Law and Kirchhoff's Laws
7. Construct basic circuits using breadboards
8. Construct a functioning DC power supply and explain its operation
9. Construct a functioning digital stopwatch using a 555 timer and explain its operation
10. Demonstrate and utilize basic programming for Arduino or similar microcontroller
11. Demonstrate methods of data acquisition and control using a National Instruments or Arduino microcontroller



IDEA Objectives

1. Gaining factual knowledge (terminology, classifications, methods, trends)
2. Learning to *apply* course material (to improve thinking, problem solving, and decisions)
3. Learning fundamental principles, generalizations, or theories



Course Requirements

1. Complete all assigned instructional materials (videos, discussion board posts, etc.)
2. Attend all class sessions/demonstrations
3. Complete all assignments, discussion board posts, and laboratory activities
4. Take all quizzes and exams
5. Follow standard safety practices

TEE 2300 is a four credit hour course. It is also a QI course. This section is taught in a flipped classroom design. You will be reading and watching videos on your own, then coming to class to conduct the labs. This is a challenging course to complete. To be successful in this course it is expected that you spend 3-5 hours completing assignments/videos/readings/lab activities per credit hour each week. That is a total of 12-20 working hours each week of the semester.



Course Structure

This course is formatted in a manner known as a “flipped classroom.” **This means that you are responsible for learning the concepts presented in the instructional materials, while the instructor is responsible for providing the resources, facilities, and additional expertise needed to answer questions and guide your learning.** The material for each week is presented in a series of video clips which contain audio as well as slideshow style outlines of the key information. Other video clips and resources are also provided. These are structured to be conveniently

accessible at any time. Lab activities will help you synthesize and apply the concepts you have learned. Quizzes will provide an opportunity for you to assess your progress and identify areas for improvement. Exams will provide a summative evaluation of your progress. Class sessions will be primarily devoted to lab work, but the instructor will also be available to answer questions and provide help on assignments.

Course Modules

There are 15 weekly modules in this course that you need to complete, along with the exams. Each module corresponds to one calendar week. A module will consist of an instruction page, one or more video lessons and other materials, weekly discussion posts, one or more laboratory assignments, and weekly quizzes. It is recommended that you complete all materials in the module in the order they are listed. Points are awarded for lab activities, discussion posts, and for quizzes. You are responsible to keep track of due dates.



Evaluation Methods and Criteria

Exams:

There will be **three** exams—two midterms and one final. (See Course Summary) The two midterm exams will not be cumulative, but be aware that the material in this course builds upon itself as the course progresses, so you will need to be able to draw upon early material throughout the course. The final exam will be cumulative. Exams will not receive additional weight beyond that listed above. All exams are worth 50 points each, including the final.

All exams will be given online via Canvas. You will have 24 hours to complete each midterm exam on the day it is due. Each exam will be timed at **50 minutes**, so it is best to know the material well beforehand, rather than attempting to look up information during the exam.

Final Exam Date:

The final exam will open online via Canvas at 12 AM on Monday, December 2, and will remain open until it is due on **Tuesday, December 10th, 2019 by NOON**. Like the midterm exams, it will also be timed at 50 minutes.

Quizzes:

Weekly quizzes will be completed online and are posted on Canvas. **Quizzes will open on Monday at 12 AM** each week, and are **due the following Friday at 11:59 PM**. If you have a technical problem with a quiz, please let your instructor know as soon as you notice it so that we can resolve the issue in a timely manner. Each quiz is designed to provide a formative assessment of your learning. Quizzes are open book, but are timed, so it is best to be familiar with the content before starting the quiz. You will have unlimited attempts at each quiz, so if you are not happy with your first score, you can study and then attempt the quiz again. Your graded score will be the average of all

attempts. Quizzes make good study material for exams. Please note that I do not “drop” your lowest quiz grade. All quizzes together make up 15% of your grade, or the equivalent of one exam.

Lab Assignments:

This course includes a significant lab component. The philosophy underlying this course is that you cannot learn electronics well without doing electronics. Lab participation is required and constitutes a significant component of your grade. You will have a lab assistant or instructor available to assist with questions and troubleshooting. You will be assigned up to two lab partners to work with on your lab activities. Lab activities are due on the date posted in Canvas. If additional lab time is needed, you may work on your own time, or schedule additional time with your instructor as needed. Lab assignments together make up 35% of your final course grade.

Prelabs

You are to complete a prelab before beginning any construction or programming. The prelab consists of the abstract, materials, and procedure, sections found in the lab report guidelines. If this document is not completed, you will be asked to leave until the document is complete. There is no grade associated with this, though it is essential to have this section completed before class.

Teamwork & Discussion:

As part of this course, you will be expected to post to a weekly discussion board. You are expected to post one question, and one answer to another person’s question each week in order to receive points for class discussions. Your first post should be a question and is due on Monday of each week. Your second post should answer another student’s question, and is due on Wednesday of each week. Posts should be thoughtful and relevant to course content. Each week’s discussion is worth 5 points, and all discussions together make up 10% of your course grade.

You will also be graded on teamwork in your assigned lab group. You are expected to attend and be on time to all lab sessions or other team meetings, accept and complete tasks, follow standard safety practices and assist with cleanup, maintain a positive attitude, and work collaboratively with other team members. In addition, it is expected that you will follow standard lab safety practices during lab activities, and that you will clean up after yourself in the lab. The last 10 minutes of each lab session will be reserved for cleanup. Teamwork evaluation is worth 10% of your final course grade.

Projects

There will be two projects in this class, a midterm project (the DIY electric motor) and a final project. These two projects together constitute a total of 15% of your final grade. More information regarding these projects are available on each of their individual canvas project pages.

Attendance/Late Work/Absences

Due to the project-based nature of this course, attendance is required in order for you to succeed. I do not take attendance, but experience shows that those who do not consistently attend class

sessions and labs are likely to struggle. Lab demonstrations and in-class activities will generally not be repeated by the instructor. In cases where failure to attend lab activities affects the ability of other students to complete lab assignments, your participation grade may be impacted.

If you know that you are going to miss a due date for an exam or another assignment due to travel, family circumstances, etc., please make arrangements with the instructor **in advance**. If you miss an exam and do not make prior arrangements, you will receive a score of zero for that exam, except in cases of emergency as deemed appropriate by the instructor. See the course summary for exam dates.

Late assignments/quizzes/lab work without prior arrangement will be accepted at a 25% credit deduction from the earned score per day late, with a maximum 100% deduction from earned credit. It is your responsibility to keep track of missed/late work. No late work of any kind will be accepted after the final exam, unless other arrangements have been made in advance. Make sure you save copies of all your work and assignments in the event that there is a grading error.

Extra Credit

The instructor may elect to offer extra credit opportunities to the class. One such example to earn extra credit is on the DIY electric motor activity. More information is available regarding that on the canvas assignment page.

Extra credit will also be assessed to ALL students in the class based on the completion of the end of course IDEA evaluation.

If 80% of the class fills out the IDEA survey, I will give 50 points towards your lab grade.

If 100% of the class fills out the IDEA survey, I will give 100 points towards your lab grade.



Grade Scheme

Final Grades:

Your final course grade will be based on the following weighted categories:

Exams	25%
Quizzes	15%
Lab Assignments	35%
Teamwork & Discussion	10%
Projects	15%

 Your final letter grade will be determined according to the following scale:

Grade	Range
A	100 % to 92.0%
A-	< 92.0 % to 90.0%
B+	< 90.0 % to 88.0%
B	< 88.0 % to 82.0%
B-	< 82.0 % to 80.0%
C+	< 80.0 % to 78.0%
C	< 78.0 % to 72.0%
C-	< 72.0 % to 70.0%
D+	< 70.0 % to 68.0%
D	< 68.0 % to 62.0%
D-	< 62.0 % to 60.0%
F	< 60.0 % to 0.0%



Course Resources

Required Course Resources:

Textbook: There is no text required for this course.

Breadboard: You will need a prototyping breadboard with a minimum of 640 points. These can be purchased from [Jameco](#) 

[https://www.jameco.com/webapp/wcs/stores/servlet/StoreCatalogDisplay?](https://www.jameco.com/webapp/wcs/stores/servlet/StoreCatalogDisplay?langId=-1&storeId=10001&catalogId=10001)

[langId=-1&storeId=10001&catalogId=10001](https://www.jameco.com/webapp/wcs/stores/servlet/StoreCatalogDisplay?langId=-1&storeId=10001&catalogId=10001)), Amazon, or other electronics retailers.

Safety Glasses: Safety glasses can be purchased from any hardware store, Walmart, etc.

Safety glasses are required by day two of class. I will not allow you into the lab to conduct lab without a pair of safety glasses nor will allow you to make up any lab resulting from forgotten safety glasses.

Optional Course Resources:

SparkFun RedBoard or other Uno-class Arduino microcontroller (\$20 from [SparkFun](#) 

<https://www.sparkfun.com/products/12757>.)

We do not have a required text for this class. However, I have had some students over the years ask about resources for exploring a personal interest in electronics. For those I would recommend the following:

Make: Electronics (Platt)  [https://www.amazon.com/Make-Electronics-Learning-Through-](https://www.amazon.com/Make-Electronics-Learning-Through-Discovery/dp/1680450263/ref=dp_ob_title_bk)

[Discovery/dp/1680450263/ref=dp_ob_title_bk](https://www.amazon.com/Make-Electronics-Learning-Through-Discovery/dp/1680450263/ref=dp_ob_title_bk).

Practical Electronics for Inventors (Scherz) <https://www.amazon.com/Practical-Electronics->



University Policies & Procedures

Academic Freedom and Professional Responsibilities

Academic freedom is the right to teach, study, discuss, investigate, discover, create, and publish freely. Academic freedom protects the rights of faculty members in teaching and of students in learning. Freedom in research is fundamental to the advancement of truth. Faculty members are entitled to full freedom in teaching, research, and creative activities, subject to the limitations imposed by professional responsibility. [Faculty Code Policy #403](#) 
<http://www.usu.edu/hr/files/uploads/Policies/403.pdf> further defines academic freedom and professional responsibilities.

Academic Integrity – "The Honor System"

Each student has the right and duty to pursue his or her academic experience free of dishonesty. To enhance the learning environment at Utah State University and to develop student academic integrity, each student agrees to the following Honor Pledge:

"I pledge, on my honor, to conduct myself with the foremost level of academic integrity."

A student who lives by the Honor Pledge is a student who does more than not cheat, falsify, or plagiarize. A student who lives by the Honor Pledge:

- Espouses academic integrity as an underlying and essential principle of the Utah State University community;
- Understands that each act of academic dishonesty devalues every degree that is awarded by this institution; and
- Is a welcomed and valued member of Utah State University.

Academic Dishonesty

The instructor of this course will take appropriate actions in response to Academic Dishonesty, as defined the University's Student Code. Acts of academic dishonesty include but are not limited to:

- **Cheating:** using, attempting to use, or providing others with any unauthorized assistance in taking quizzes, tests, examinations, or in any other academic exercise or activity. Unauthorized assistance includes:
 - Working in a group when the instructor has designated that the quiz, test, examination, or any other academic exercise or activity be done "individually;"
 - Depending on the aid of sources beyond those authorized by the instructor in writing papers, preparing reports, solving problems, or carrying out other assignments;

- Substituting for another student, or permitting another student to substitute for oneself, in taking an examination or preparing academic work;
- Acquiring tests or other academic material belonging to a faculty member, staff member, or another student without express permission;
- Continuing to write after time has been called on a quiz, test, examination, or any other academic exercise or activity;
- Submitting substantially the same work for credit in more than one class, except with prior approval of the instructor; or engaging in any form of research fraud.
- **Falsification:** altering or fabricating any information or citation in an academic exercise or activity.
- **Plagiarism:** representing, by paraphrase or direct quotation, the published or unpublished work of another person as one's own in any academic exercise or activity without full and clear acknowledgment. It also includes using materials prepared by another person or by an agency engaged in the sale of term papers or other academic materials.

For additional information go to: [ARTICLE VI. University Regulations Regarding Academic Integrity](https://studentconduct.usu.edu/studentcode/article6) ↗ [.\(https://studentconduct.usu.edu/studentcode/article6\)](https://studentconduct.usu.edu/studentcode/article6)

Sexual Harassment/Title IX

Utah State University is committed to creating and maintaining an environment free from acts of sexual misconduct and discrimination and to fostering respect and dignity for all members of the USU community. Title IX and [USU Policy 339](http://www.usu.edu/policies/339) ↗ [.\(http://www.usu.edu/policies/339\)](http://www.usu.edu/policies/339) address sexual harassment in the workplace and academic setting.

The university responds promptly upon learning of any form of possible discrimination or sexual misconduct. Any individual may contact USU's [Office of Equity](https://equity.usu.edu/) ↗ [.\(https://equity.usu.edu/\)](https://equity.usu.edu/) for available options and resources or clarification. The university has established a complaint procedure to handle all types of discrimination complaints, including sexual harassment ([USU Policy 305](http://www.usu.edu/policies/305/) ↗ [.\(http://www.usu.edu/policies/305/\)](http://www.usu.edu/policies/305/)), and has designated the Office of Equity Director/Title IX Coordinator as the official responsible for receiving and investigating complaints of sexual harassment.

Withdrawal Policy and "I" Grade Policy

Students are required to complete all courses for which they are registered by the end of the semester. In some cases, a student may be unable to complete all of the coursework because of extenuating circumstances, but not due to poor performance or to retain financial aid. The term 'extenuating' circumstances includes: (1) incapacitating illness which prevents a student from attending classes for a minimum period of two weeks, (2) a death in the immediate family, (3) financial responsibilities requiring a student to alter a work schedule to secure employment, (4)  change in work schedule as required by an employer, or (5) other emergencies deemed appropriate by the instructor.

Students with Disabilities

USU welcomes students with disabilities. If you have, or suspect you may have, a physical, mental health, or learning disability that may require accommodations in this course, please contact the [Disability Resource Center \(DRC\)](http://www.usu.edu/drc/) [↗](http://www.usu.edu/drc/) as early in the semester as possible (University Inn # 101, (435) 797-2444, drc@usu.edu (<mailto:drc@usu.edu>)). All disability related accommodations must be approved by the DRC. Once approved, the DRC will coordinate with faculty to provide accommodations.

Diversity Statement

Regardless of intent, careless or ill-informed remarks can be offensive and hurtful to others and detract from the learning climate. If you feel uncomfortable in a classroom due to offensive language or actions by an instructor or student(s) regarding ethnicity, gender, or sexual orientation, contact:

- Division of Student Affairs: <https://studentaffairs.usu.edu> [↗](https://studentaffairs.usu.edu/), (435) 797-1712, studentservices@usu.edu (<mailto:studentservices@usu.edu>), TSC 220
- Student Legal Services: <https://ususa.usu.edu/student-association/student-advocacy/legal-services> [↗](https://ususa.usu.edu/student-association/student-advocacy/legal-services/), (435) 797-2912, TSC 326,
- Access and Diversity: <http://accesscenter.usu.edu> [↗](http://accesscenter.usu.edu/), (435) 797-1728, access@usu.edu (<mailto:access@usu.edu>); TSC 315
- Multicultural Programs: <http://accesscenter.usu.edu/multiculture> [↗](http://accesscenter.usu.edu/multiculture/), (435) 797-1728, TSC 315
- LGBTQA Programs: <http://accesscenter.usu.edu/lgbtqa> [↗](http://accesscenter.usu.edu/lgbtqa/), (435) 797-1728, TSC 3145
- Provost's Office Diversity Resources: <https://www.usu.edu/provost/diversity> [↗](https://www.usu.edu/provost/diversity/), (435) 797-8176

You can learn about your student rights by visiting:

The Code of Policies and Procedures for Students at Utah State University: <https://studentconduct.usu.edu/studentcode> [↗](https://studentconduct.usu.edu/studentcode/)
(<https://studentconduct.usu.edu/studentcode/>)

Grievance Process

Students who feel they have been unfairly treated may file a grievance through the channels and procedures described in the Student Code: [Article VII](https://studentconduct.usu.edu/studentcode/article7) [↗](https://studentconduct.usu.edu/studentcode/article7/)
(<https://studentconduct.usu.edu/studentcode/article7/>).

Full details for USU Academic Policies and Procedures can be found at:

- [Student Conduct](http://www.usu.edu/studentconduct) [↗](http://www.usu.edu/studentconduct/)
- [Student Code](https://studentconduct.usu.edu/studentcode/) [↗](https://studentconduct.usu.edu/studentcode/)

- [Academic Integrity](https://studentconduct.usu.edu/studentcode/article6)  (<https://studentconduct.usu.edu/studentcode/article6>)
- [USU Selected Academic Policies and Procedures](http://www.usu.edu/provost/faculty-life/syllabus.cfm)  (<http://www.usu.edu/provost/faculty-life/syllabus.cfm>)
- [USU Academic Policies and Procedures](http://catalog.usu.edu/content.php?catoid=4&navoid=546)  (<http://catalog.usu.edu/content.php?catoid=4&navoid=546>)
- [Academic Freedom and Professional Responsibility Policy](http://www.usu.edu/hr/files/uploads/Policies/403.pdf)  (<http://www.usu.edu/hr/files/uploads/Policies/403.pdf>)

Emergency Procedures

In the case of a drill or real emergency, classes will be notified to evacuate the building by the sound of the fire/emergency alarm system or by a building representative. In the event of a disaster that may interfere with either notification, evacuate as the situation dictates (i.e., in an earthquake when shaking ceases or immediately when a fire is discovered). Turn off computers and take any personal items with you. Elevators should not be used; instead, use the closest stairs.

USU Course Policies:

[Appropriate Use of Canvas and Other IT Resources](https://www.usu.edu/teach/help-topics/teaching-tips/syllabus-resources#appropriate) (<https://www.usu.edu/teach/help-topics/teaching-tips/syllabus-resources#appropriate>)

[Academic Freedom and Professional Responsibilities](https://www.usu.edu/teach/help-topics/teaching-tips/syllabus-resources#freedom) (<https://www.usu.edu/teach/help-topics/teaching-tips/syllabus-resources#freedom>)

[Academic Integrity - “The Honor System”](https://www.usu.edu/teach/help-topics/teaching-tips/syllabus-resources#integrity) (<https://www.usu.edu/teach/help-topics/teaching-tips/syllabus-resources#integrity>)

[Academic Dishonesty](https://www.usu.edu/teach/help-topics/teaching-tips/syllabus-resources#dishonesty) (<https://www.usu.edu/teach/help-topics/teaching-tips/syllabus-resources#dishonesty>)

[Discrimination and Sexual Misconduct](https://www.usu.edu/teach/help-topics/teaching-tips/syllabus-resources#misconduct) (<https://www.usu.edu/teach/help-topics/teaching-tips/syllabus-resources#misconduct>)

[Withdrawal Policy and “I” Grade Policy](https://www.usu.edu/teach/help-topics/teaching-tips/syllabus-resources#policy) (<https://www.usu.edu/teach/help-topics/teaching-tips/syllabus-resources#policy>)

[Students with Disabilities](https://www.usu.edu/teach/help-topics/teaching-tips/syllabus-resources#disabilities) (<https://www.usu.edu/teach/help-topics/teaching-tips/syllabus-resources#disabilities>)

[Students Who are Pregnant or Have a Pregnancy-related Condition](https://www.usu.edu/teach/help-topics/teaching-tips/syllabus-resources#pregnant)

(<https://www.usu.edu/teach/help-topics/teaching-tips/syllabus-resources#pregnant>)

 [Inclusive Excellence](https://www.usu.edu/teach/help-topics/teaching-tips/syllabus-resources#excellence) (<https://www.usu.edu/teach/help-topics/teaching-tips/syllabus-resources#excellence>)

[Grievance Process \(https://www.usu.edu/teach/help-topics/teaching-tips/syllabus-resources#grievance\)](https://www.usu.edu/teach/help-topics/teaching-tips/syllabus-resources#grievance)

[Full Details for USU Academic Policies and Procedures \(https://www.usu.edu/teach/help-topics/teaching-tips/syllabus-resources#details\)](https://www.usu.edu/teach/help-topics/teaching-tips/syllabus-resources#details)

[Emergency Procedures \(https://www.usu.edu/teach/help-topics/teaching-tips/syllabus-resources#emergency\)](https://www.usu.edu/teach/help-topics/teaching-tips/syllabus-resources#emergency)

[General Health Protocols \(https://www.usu.edu/teach/help-topics/teaching-tips/syllabus-resources#general\)](https://www.usu.edu/teach/help-topics/teaching-tips/syllabus-resources#general)

[Mental Health \(https://www.usu.edu/teach/help-topics/teaching-tips/syllabus-resources#mental\)](https://www.usu.edu/teach/help-topics/teaching-tips/syllabus-resources#mental)

Course Summary:

Date	Details	Due
Mon Aug 26, 2019	 Week 1: Course Procedures, Lab Safety, & Simple Circuits	to do: 11:59pm
Tue Aug 27, 2019	 Quiz 0 - Syllabus (https://usu.instructure.com/courses/546617/assignments/2658122)	due by 11:59pm
Fri Aug 30, 2019	 Quiz 1 - Lab Safety (https://usu.instructure.com/courses/546617/assignments/2658128)	due by 11:59pm
Sun Sep 1, 2019	 Arduino lab 1 (https://usu.instructure.com/courses/546617/assignments/2658151)	due by 11:59pm
	 Week 2: Getting to know your tools, Spaceship Interface, Love-o-Meter	to do: 11:59pm
Wed Sep 4, 2019	 Week 2 Q&A (https://usu.instructure.com/courses/546617/assignments/2658150)	due by 11:59pm
Fri Sep 6, 2019	 Quiz 2 - Circuits and Circuit Analysis (https://usu.instructure.com/courses/546617/assignments/2658125)	due by 11:59pm
Sun Sep 8, 2019	 Arduino lab 2 (https://usu.instructure.com/courses/546617/assignments/2658155)	due by 11:59pm

Date	Details	Due
	 Arduino lab 3 https://usu.instructure.com/courses/546617/assignments/2658156	due by 11:59pm
	 Week 3: Capacitance	to do: 11:59pm
	 Week 4: Soldering	to do: 11:59pm
Wed Sep 11, 2019	 Week 3 Q&A https://usu.instructure.com/courses/546617/assignments/2658149	due by 11:59pm
Sun Sep 15, 2019	 Capacitance https://usu.instructure.com/courses/546617/assignments/2658164	due by 11:59pm
	 Week 5: AC and DC Power	to do: 11:59pm
Wed Sep 18, 2019	 Week 4 Q&A https://usu.instructure.com/courses/546617/assignments/2658148	due by 11:59pm
Fri Sep 20, 2019	 Quiz 3 - Electricity & Soldering https://usu.instructure.com/courses/546617/assignments/2658129	due by 11:59pm
Sun Sep 22, 2019	 Lab 4 - Soldering https://usu.instructure.com/courses/546617/assignments/2658180	due by 11:59pm
	 Week 6: Pulse Width Modulation	to do: 11:59pm
Wed Sep 25, 2019	 Week 5 Q&A https://usu.instructure.com/courses/546617/assignments/2658147	due by 11:59pm
Fri Sep 27, 2019	 Quiz 4 - Alternating Current & Direct Current https://usu.instructure.com/courses/546617/assignments/2658131	due by 11:59pm
Sun Sep 29, 2019	 DC Power Supply https://usu.instructure.com/courses/546617/assignments/2658165	due by 11:59pm
	 Week 7: Switches, Relays, and Transistors	to do: 11:59pm

Date	Details	Due
Wed Oct 2, 2019	 Week 6 Q&A https://usu.instructure.com/courses/546617/assignments/2658146	due by 11:59pm
Fri Oct 4, 2019	 Quiz 5 - DC Power Supplies https://usu.instructure.com/courses/546617/assignments/2658132	due by 11:59pm
Sun Oct 6, 2019	 Arduino Lab 4 - Color mixing Lamp from Arduino https://usu.instructure.com/courses/546617/assignments/2658157	due by 11:59pm
Sun Oct 6, 2019	 LED Dimmer https://usu.instructure.com/courses/546617/assignments/2658181	due by 11:59pm
Sun Oct 6, 2019	 Week 8: Faraday's Law	to do: 11:59pm
Wed Oct 9, 2019	 Week 7 Q&A https://usu.instructure.com/courses/546617/assignments/2658145	due by 11:59pm
Fri Oct 11, 2019	 Quiz 6 - Switches, Relays, & Transistors https://usu.instructure.com/courses/546617/assignments/2658121	due by 11:59pm
Sun Oct 13, 2019	 Arduino Lab 9 - Motorized Pinwheel https://usu.instructure.com/courses/546617/assignments/2658163	due by 11:59pm
Sun Oct 13, 2019	 Relays & Transistors https://usu.instructure.com/courses/546617/assignments/2658182	due by 11:59pm
Sun Oct 13, 2019	 Week 9: Binary Numbers and 555 Timers	to do: 11:59pm
Wed Oct 16, 2019	 Week 8 Q&A https://usu.instructure.com/courses/546617/assignments/2658137	due by 11:59pm
Fri Oct 18, 2019	 Midterm Exam 1 https://usu.instructure.com/courses/546617/assignments/2658133	due by 11:59pm
Fri Oct 18, 2019	 Quiz 7 - PWM, Motors, & Generators https://usu.instructure.com/courses/546617/assignments/2658123	due by 11:59pm



Date	Details	Due
Sun Oct 20, 2019	 Wireless Power Activity https://usu.instructure.com/courses/546617/assignments/2658184	due by 11:59pm
Wed Oct 23, 2019	 Week 9 Q&A https://usu.instructure.com/courses/546617/assignments/2658144	due by 11:59pm
Fri Oct 25, 2019	 Quiz 8 - Binary Numbers and 555 Timers https://usu.instructure.com/courses/546617/assignments/2658124	due by 11:59pm
Sun Oct 27, 2019	 Lab 10 - Digital Stopwatch Part 3 https://usu.instructure.com/courses/546617/assignments/2658173	due by 10:20am
	 Week 10: Digital Circuits	to do: 11:59pm
	 Digital Stopwatch Part 1 https://usu.instructure.com/courses/546617/assignments/2658167	due by 11:59pm
Fri Nov 1, 2019	 Digital Stopwatch Part 2 https://usu.instructure.com/courses/546617/assignments/2658168	due by 11:59pm
	 Lab 11 - Programming Line Outputs https://usu.instructure.com/courses/546617/assignments/2658174	due by 10:20am
Sun Nov 3, 2019	 IDEA Survey Extra Credit https://usu.instructure.com/courses/546617/assignments/2738242	due by 11:59pm
	 Arduino Lab 6 - Light Theremin https://usu.instructure.com/courses/546617/assignments/2658159	due by 10:20am
	 Arduino Lab 7 - Keyboard instrument https://usu.instructure.com/courses/546617/assignments/2658160	due by 10:20am
	 Arduino Lab 13 - Touchy Feely Lamp https://usu.instructure.com/courses/546617/assignments/2658154	due by 11:59pm



Date	Details	Due
	 Quiz 9 - Programming Line Outputs https://usu.instructure.com/courses/546617/assignments/2658134	due by 11:59pm
	 Week 11: Programming Line Inputs and Digital Ports	to do: 11:59pm
	 Arduino Lab 11- Crystal Ball https://usu.instructure.com/courses/546617/assignments/2658152	due by 11:59pm
	 Arduino Lab 12 - Knock Lock https://usu.instructure.com/courses/546617/assignments/2658153	due by 11:59pm
	 Arduino Lab 5 - Mood Cue https://usu.instructure.com/courses/546617/assignments/2658158	due by 11:59pm
Wed Nov 6, 2019	 Week 10 Q&A https://usu.instructure.com/courses/546617/assignments/2658143	due by 11:59pm
	 Week 11 Q&A https://usu.instructure.com/courses/546617/assignments/2658142	due by 11:59pm
Fri Nov 8, 2019	 Lab 12a - Programming Line Inputs https://usu.instructure.com/courses/546617/assignments/2658175	due by 10:20am
	 Lab 12b - Programming Digital Ports https://usu.instructure.com/courses/546617/assignments/2658176	due by 10:20am
Sun Nov 10, 2019	 Arduino Lab 7- Keyboard instrument https://usu.instructure.com/courses/546617/assignments/2658161	due by 11:59pm
	 Arduino Lab 8 - Digital Hourglass https://usu.instructure.com/courses/546617/assignments/2658162	due by 11:59pm
	 Quiz 10 - Programming Line Inputs & Digital Ports https://usu.instructure.com/courses/546617/assignments/2658136	due by 11:59pm



Date	Details	Due
	 Week 12: Digital Logic Gates	to do: 11:59pm
Wed Nov 13, 2019	 Lab 13 - Controlling Independent Systems https://usu.instructure.com/courses/546617/assignments/2658177	due by 10:20am
	 Week 12 Q&A https://usu.instructure.com/courses/546617/assignments/2658141	due by 11:59pm
Fri Nov 15, 2019	 Digital Logic Gate Lab https://usu.instructure.com/courses/546617/assignments/2658166	due by 11:59pm
	 Quiz 11 - Digital Electronics https://usu.instructure.com/courses/546617/assignments/2658130	due by 11:59pm
Sun Nov 17, 2019	 Week 13: Controlling Independent Systems	to do: 11:59pm
	 Logic Gates part 1 https://usu.instructure.com/courses/546617/assignments/2803426	due by 11:59pm
	 DIY motor https://usu.instructure.com/courses/546617/assignments/2658169	due by 10:20am
Thu Nov 21, 2019	 Lab 14 - Programming Analog Inputs https://usu.instructure.com/courses/546617/assignments/2658178	due by 10:20am
	 Final Project Proposal https://usu.instructure.com/courses/546617/assignments/2658171	due by 2:45pm
	 Midterm Exam 2 https://usu.instructure.com/courses/546617/assignments/2658126	due by 11:59pm
Sun Nov 24, 2019	 Week 14: Programming Analog Inputs	to do: 11:59pm
Nov 26, 2019	 Final Project Working Prototype https://usu.instructure.com/courses/546617/assignments/2658172	due by 2:45pm

Date	Details	Due
Wed Nov 27, 2019	 Week 13 Q&A (https://usu.instructure.com/courses/546617/assignments/2658140)	due by 11:59pm
Fri Nov 29, 2019	 Quiz 12 - Controlling Independent Systems (https://usu.instructure.com/courses/546617/assignments/2658120)	due by 11:59pm
Fri Nov 29, 2019	 Quiz 13 - Programming Analog Inputs (https://usu.instructure.com/courses/546617/assignments/2658135)	due by 11:59pm
Thu Dec 5, 2019	 Final Project Presentation and Lab report (https://usu.instructure.com/courses/546617/assignments/2658170)	due by 2:45pm
Fri Dec 6, 2019	 Lab 15 - Automated System Design Challenge (https://usu.instructure.com/courses/546617/assignments/2658179)	due by 5pm
Tue Dec 10, 2019	 Final Exam (https://usu.instructure.com/courses/546617/assignments/2658127)	due by 12pm
Thu Dec 12, 2019	 Semester Teamwork (https://usu.instructure.com/courses/546617/assignments/2658183)	due by 12pm
	 Working Motor (https://usu.instructure.com/courses/546617/assignments/2813085)	

