

## SYLLABUS

# Fundamentals of Robotics and Cyberphysical Systems

## INSTRUCTION

**Instructors:** Daniel S. Drew, PhD  
Jacob A. George, PhD

**Webpage:** <https://drl.ece.utah.edu/>  
<https://neurorobotics.ece.utah.edu/>

**Email:** [daniel.drew@utah.edu](mailto:daniel.drew@utah.edu)  
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**Office:** Dr. Drew: MEB 2260  
Dr. George: Neilsen Rehabilitation  
Hospital, Room 2125B

**Zoom Room:** Dr. Drew:  
<https://utah.zoom.us/j/7254103578>  
Dr. George:  
<https://utah.zoom.us/j/3038796986>

**Communication & Office Hours:** Review the "Communication" section below for more information.

**Class Room:** MEB 2555  
MoWe / 1:25pm-2:45pm

**Teaching Assistant:** Rebecca Miles  
**Email:** [rebecca.miles@utah.edu](mailto:rebecca.miles@utah.edu)

## COURSE DESCRIPTION

## ▾ Overview

<b>Course</b>	ECE 3610
<b>Department</b>	Electrical & Computer Engineering
<b>Pre-Requisites</b>	Basic MATLAB: e.g., ECE 1050 Basic Circuits: e.g., ECE 2240
<b>Credit Hours</b>	3
<b>Semester</b>	Spring 2023

## Description

This 3-credit course will cover fundamental concepts related to the sensing, actuation, signal processing, and control mechanisms underlying robots and other intelligent physical systems.

Robots and other connected devices with the ability to physically interact with the world around them are transforming the world. The study of these systems is inherently interdisciplinary, and working on them effectively requires both a broad skillset and the ability to think about end-to-end systems holistically. This course is divided into three overarching modules: sensing, actuation, and intelligence. Each module will contain detail about both the theoretical underpinnings and the practical implementation of the topic material. Every class will include hands-on experience with electronic components and an embedded microcontroller, building the requisite tools over the course of the semester for a final project where you will program an autonomous robot in a class competition.

Specific topics of study include: transduction principles of common sensors and actuators, basic circuits and principles for the interfacing of sensors and actuators with embedded microcontrollers, microcontroller architecture concepts, introductory-level digital signal processing including intelligent thresholding, low- and high-pass filters, introductory feedback control principles including PID, and machine learning concepts like neural networks.

## ▸ Goals & Objectives

This class is composed of qualitative and quantitative homework sets based on reading assignments, in-class hardware tasks with quantitative responses, and a final project. There are no exams; core learning objectives will be mastered through the in-class assignments, hands-on hardware development, and the final project.

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

- **Hardware**

- Describe how a variety of sensors transduce physical quantities into electrical signals
- Describe how a variety of actuators transduce electrical signals into mechanical motion
- Describe the architecture of a modern microcontroller
- Build and use supporting circuits to safely drive electric motors
- Build and use supporting circuits to reliably gather sensor data
- **Software**
  - Use and understand complex software libraries
  - Filter noisy sensor signals digitally
  - Implement an artificial neural network in MATLAB
- **Systems**
  - Implement a closed feedback loop between a sensor and actuator connected through a microcontroller
  - Work with the Arduino IDE to program a microcontroller
  - Describe what constitutes a robotic and cyberphysical system
  - Describe the origin of robotics and cyberphysical systems as well as ongoing and future challenges
- **Teamwork**
  - Identify team roles and identify a feasible team performance plan
  - Work effectively in teams to solve engineering challenges

## ▶ Required Materials

All reading materials, research equipment, and required software will be provided by the instructor. Students will work in groups to complete final projects. Computers will be available for use with preinstalled software. Students are also welcome to install software on their personal laptops. MATLAB is free for all students, available at:

<https://software.utah.edu/faq/license/mwc/index.php> 

[\(https://software.utah.edu/faq/license/mwc/index.php\)](https://software.utah.edu/faq/license/mwc/index.php)


Ensure you have these ahead of time as they will be required to complete assignments and activities throughout the course.

## ▶ Communication

Please review the communication methods and requirements for this course:

## PREFERRED CONTACT METHODS

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The easiest way to contact your instructor directly is to use the  *Inbox*, located in the far left Canvas menu.

You can also send questions via email. If you choose to email, please include the course number in the subject line. For example, “[ECE 3610] – question about project milestone 1.” Failure to include the course number in the subject line may result in significantly delayed responses.

## OFFICE HOURS

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Dr. Drew: MEB 2260, by appointment. Send me an email, Canvas message, or talk to me in class about it.

### ▸ Course Schedule

This Course Schedule is meant to serve as an outline and guide for our course. Please note that I may modify it with reasonable notice to you. Any changes will be announced in class and posted on Canvas.

Week	Date	Class Section	Reading Topic	In-Class Lab
Week 1	1/9	Class Intro 1	Syllabus	Hello World: RGB Blinking
	1/11	Class Intro 2	Past, Present, and Future Robotics	Sensor/Actuator Interfacing
Week 2	1/16	<b>MLK Day</b>		
	1/18	Sensors 1	uCs, Voltage Dividers, and ADCs	Analog Inputs and Variable Resistances
Week 3	1/23	Sensors 2	Sensor Transduction Principles	Scale Factors and Time Constants
	1/25	Sensors 3	MEMS Sensors and Comm. Protocols	Acclerometers: The Gravity Vector
Week 4	1/30	Sensors 4	Noise and Filtering	Basic DSP: Thresholding and Filtering
	2/1	Sensors Milestone	Simultaneous Localization and Mapping (SLAM)	<b>Ultrasonic Mapping</b>
Week 5	2/6	Actuators 1	Motors and Encoders	Basic Sensorimotor Loops
	2/8	Actuators 2	Other Actuators and Drive Circuits	A Piezo Piano
Week 6	2/13	Actuators 3	Feedback Control 1	Closed-Loop Control 1
	2/15	Actuators 4	Feedback Control 2	Closed-Loop Control 2
Week 7	2/20	<b>Presidents Day</b>		
	2/22	Actuators Milestone	Robot Mobility	<b>Differential Drive Robots</b>
Week 8	2/27	Intelligence 1	Introduction to AI	Equipment setup & manual classification
	3/1	Intelligence 2	Linear Discriminate Analysis	LDA visualization & classification
Week 9	3/6	<b>Spring break</b>		
	3/8	<b>Spring break</b>		
Week 10	3/13	Project Intro	Effective Teaming Practice	Team Building and Planning
	3/15	Intelligence 3	Intro to Neural Networks	Perceptron classification
Week 11	3/20	Intelligence 4	Convolutional Neural Networks	CNN classification
	3/22	Intelligence Milestone	Software Engineering 2.0	Data engineering OR Block classification
Week 12	3/27	<b>Project Time/Open Topics/Guest Lectures</b>		
	3/29			
Week 13	4/3			
	4/5			
Week 14	4/10			
	4/12			
Week 15	4/17			
	4/19	<b>Project Presentations</b>		
Week 16	4/24	<b>Project Competition</b>		

## ► Evaluation

Your grade in this course will be based on your completion of reading (text and video) assignments, quantitative quizzes based on the reading topics, completion of in-class lab exercises, and a final project. Class participation will be assessed through a combination of peer review, instructor evaluation during lab exercises, and instructor-chosen opportunities to discuss key figures/concepts from the reading assignment.

Reading assignments will be completed prior to class. Quizzes will be either completed in class or immediately afterwards. During class we will work through short lab exercises using reading topic-relevant hardware. The final project will have you work in groups to complete a challenge with a mobile robot. You will write up your project approach, give a brief presentation, and compete with other groups to score the most task points.

- *Reading Assignments (15% of your grade)*: Reading material will be posted on Canvas roughly one week before the due date. Reading assignments consist of short discussions on the reading material. Reading assignments are due by 11:59pm the day before lecture. This gives me time to review any questions you have about the reading and tailor the lecture to the class's needs.

- *Reading and Concept Quizzes (15% of your grade)*: Each quiz set will consist of a few questions; the specific points assigned to each question will be noted in the quiz. When time permits, quizzes will be completed in class where the instructor can answer questions as you work. All quizzes are due by 11:59pm the night of the lecture. In other words, you should complete them in class or immediately after.
- *Lab Quizzes and Checkouts (30% of your grade)*: In every class we will perform a hands-on lab assignment. These labs will include deliverables in the form of Canvas quizzes and/or behaviors that must be demonstrated to teaching staff. Lab Quizzes and Checkouts are due either in class the day of the lab, or at the beginning of the immediate next lab period.
- *Final Project (30% of your grade)*: The Final Project grade will include written documentation of your group's approach, an in-class presentation, your performance in the class competition, and results of a peer evaluation.
- *Class Participation (10% of your grade)*: Your participation grade will be assessed by teaching staff during each class period. Be prepared to answer questions about the reading assignments and to participate enthusiastically in any group work.
- *Extra Credit*: There will be various opportunities in the course to receive extra credit. For example, there are opportunities to provide course feedback for extra credit.

## COURSE POLICIES

### ▸ Submitting Assignments

Reading assignments must be completed prior to class. During class we will review reading assignments and perform in-class canvas exercises to assess your learning from the reading assignments. Lab checkouts, reading quizzes, and lab quizzes are due by the **Friday of the week they were assigned**. They are designed for you to finish in a single class period. If you need more time, you can get them checked out by: 1) showing them the next class (if Monday lab), or 2) sending a video to instruction staff on Canvas. I am flexible about lab checkouts in the case of necessary absences; just send me a message, we will make it work.

All assignments, unless otherwise announced, must be submitted to the designated area of Canvas. Do not submit assignments via email.

The Canvas page may seem dense at first. I will try to go over the modules in class multiple times until you get the hang of things. Rest assured that in the fourth module there will be less reading, and there will be barely any Canvas assignments due during the bulk of the final project phase.

## ▸ Late Assignments

You are allowed two late submissions during the semester – no explanation is necessary. Additional late submissions will result in a 10% reduction in grade for that assignment. If more than two assignments are late, the two free late submissions will apply to the two heaviest weighted assignments (e.g., lab checkouts over reading assignments) to maximize your overall course grade. **Assignments that are submitted more than two weeks late will not be accepted and will result in a zero grade for that assignment!** Final projects can NOT be submitted late!

Example A: you are sick and won't be able to complete a reading assignment due 1/19. You submit it late on 1/26. You receive a 10% penalty on your grade. At the end of the semester, the 10% penalty is removed because it was your only late assignment and you are allowed two late assignments without penalty.

Example B: you have a bunch of midterms going on and you can't submit your reading assignment by the deadline of 2/9. You haven't used any of your free late submissions. You try to submit it late on 2/25 but canvas does not allow it. You still receive a zero on the assignment because it is more than two weeks beyond the original deadline. You should have submitted it late before 2/23!

Example C: you submitted three reading assignments late and two lab checkouts late. All of them show up in canvas with a 10% penalty. At the end of the semester, the two free late submissions are applied to the lab checkouts because they are weighted the most. The 10% penalty is removed on the two lab checkouts but remains on the three reading assignments.

Example D: you haven't used any of your free late submissions all semester. You decide to save them for the final project. You try to submit the final project two days late, but canvas will not allow the submission. You receive a zero on the final project. Late submissions are not allowed for the final project.

## ▸ Grading

### COURSE GRADING SCALE

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Your final course grade will NOT be curved. My objective is to ensure that as many students learn the course material as possible. It is theoretically possible for every student to get an A or for every student to get an F. Grades will be based on the following distribution:

≥93%: A

≥83%: B

≥73%: C

≥65%: D

<60%: F

Grey areas between two letter grades (e.g., 90-93% --> A, A-) and +/- grades will be determined based on the following: 1) course attendance, 2) overall course participation, 3) upward/downward trend in course grades/participation, 4) final project performance, and 5) clear mastery of the learning objectives.

## ▸ Accommodations

### DISCLAIMER

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**Accommodations will be considered on an individual basis and may require documentation.**

Please contact your instructor and/or teaching assistant as soon as possible (preferably shortly before the semester begins) to request accommodations of any kind.

### EXTREME PERSONAL CIRCUMSTANCES

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Please **contact your instructor as soon as possible** if an extreme personal circumstance (hospitalization, death of a close relative, natural disaster, etc.) is interfering with your ability to complete your work.

### RELIGIOUS PRACTICE

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To request an accommodation for religious practices, **contact your instructor at the beginning of the semester.**

### ACTIVE DUTY MILITARY

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If you are student on active duty with the military and experience issues that prevent you from participating in the course **because of deployment or service responsibilities, contact your instructor as soon as possible** to discuss appropriate accommodations.



## DISABILITY ACCESS

All written information in this course can be made available in an alternative format with prior notification to the Center for Disability Services (CDS). CDS will work with you and the instructor to make arrangements for accommodations. Prior notice is appreciated. To read the full accommodations policy for the University of Utah, please see Section Q of the [Instruction & Evaluation regulations](http://regulations.utah.edu/academics/6-100.php) [↗](http://regulations.utah.edu/academics/6-100.php) (<http://regulations.utah.edu/academics/6-100.php>).

If you will need accommodations in this class, contact:

### Center for Disability Services

☎ 801-581-5020

🌐 [disability.utah.edu](https://disability.utah.edu/) [↗](https://disability.utah.edu/) (<https://disability.utah.edu/>)

📍 162 Union Building

200 S. Central Campus Dr.

Salt Lake City, UT 84112

## ▸ Changes to the Syllabus

**This syllabus is not a contract.** It is meant to serve as an outline and guide for your course. Please note that your instructor may modify it to accommodate the needs of your class.

**You will be notified of any changes to the Syllabus.**

## EXPECTATIONS

## ▸ Student Expectations

Though the online format allows students greater flexibility to complete their work, this course does have a structure and timeline! As such, the following is expected of all students in this class:

- Students must be **self-motivated, organized, and willing to stay on top of their schedule**. Students should take control of their learning while in this course.
- Students will **attend all classes in person**
- Students are expected to **interact regularly with their classmates**
- Students will **regularly check for course updates** and will **update their Canvas notification settings** to ensure they receive timely notifications from the course.

- Students are expected to work on assignments outside of class. This is a 3-credit course. **University policy** [↗\(https://regulations.utah.edu/academics/6-100.php\)](https://regulations.utah.edu/academics/6-100.php) states that a 3-credit course should generally consist of 3 hours in class and 6 hours outside of class per week. This means **students should expect two-week research projects to take ~18 hours of time to complete well.**
- Students will **contact their instructor or teaching assistant** in a timely manner if they have any **questions**, are **struggling** with course materials, or **need further assistance** from their instructor.
  - If you do not hear back within 3 days after sending a message, please contact your instructor/TA again.
- Students will **follow all official University of Utah policies** regarding interpersonal conduct, academic dishonesty, and other rights and responsibilities of students outlined in the **University of Utah Student Handbook** [↗\(https://registrar.utah.edu/handbook/\)](https://registrar.utah.edu/handbook/) and **Code of Student Rights and Responsibilities** [↗\(https://regulations.utah.edu/academics/6-400.php\)](https://regulations.utah.edu/academics/6-400.php).
  - If you have any questions about this, please contact the **Dean of Students** [↗\(https://deanofstudents.utah.edu/\)](https://deanofstudents.utah.edu/).

## ▶ Instructor Expectations

Your course instructor is an expert in the topics you will learn about this semester. Your instructor is your mentor and facilitator of the classroom experience, aided by teaching assistants. Instructors are committed to:

- The instructor will design the course to **include lectures, learning materials, and assignments that are accessible** and provide students with **opportunities to learn** and practice course content.
- The instructor and teaching assistants will ensure that the **course remains a safe space** where students can engage with difficult content thoughtfully and respectfully.
- The instructor and teaching assistants will **interact with the class regularly** via announcements, virtual office hours (one-on-one video conferencing), emails/the Canvas Inbox, feedback on assignments, and comments on Discussions, among other methods.
- The instructor and teaching assistants will **respond to students in a timely manner**: within 48 hours, not including weekends and holidays.
- The instructor and teaching assistants will be **available for individual consultation** via virtual office hours (one-on-one video conferencing), email, or phone.
- The instructor and teaching assistants will **provide relevant feedback in a timely manner.**
- The instructor and teaching assistants will **follow all official University of Utah policies** regarding interpersonal conduct, accommodations, and other important duties.

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## DEPARTMENT POLICIES

**Department policies** [↗ \(https://www.ece.utah.edu/ugpolicies\)](https://www.ece.utah.edu/ugpolicies) describe the following:

- Challenging Courses
- Student Conduct
- Class Repeats
- Withdrawal Procedure
- Exceptions to Policy
- Permission Codes
- Probationary Status
- Grading

For technical issues in the lab (broken equipment, software issues, etc) please send an email that describes the issue, description of setup where error occurred, which bench station, etc to:

[ecelabs@coe.utah.edu \(mailto:ecelabs@coe.utah.edu\)](mailto:ecelabs@coe.utah.edu)

For student concerns and other feedback, please fill out the form at:

<https://www.ece.utah.edu/studentfeedback> [↗ \(https://www.ece.utah.edu/studentfeedback\)](https://www.ece.utah.edu/studentfeedback)

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## COLLEGE POLICIES

**College policies** [↗ \(https://www.coe.utah.edu/students/current/semester-guidelines/\)](https://www.coe.utah.edu/students/current/semester-guidelines/) describe the following:

- Appeals
- Withdrawing from Classes
- Adding Classes
- Repeating Courses
- CR/NC Policy
- Safety

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## UNIVERSITY POLICIES

- ▶ COVID-19 Campus Guidelines



# CAMPUS COVID-19 RESOURCES

## INFORMATION & PRECAUTIONS

### **We are a mask friendly campus**

When students and faculty return to campus for the Spring 2023 semester, masks will not be required in indoor spaces on main campus. The general public will not be required to wear masks in public facilities—including the Utah Museum of Fine Arts, Natural History Museum of Utah, and Pioneer Theatre. It is important that our campus remain “mask-friendly.” Those who still wish to wear masks are encouraged to do so, especially those at high risk of severe illness from COVID-19.

**Masks are still required in all University of Utah Health facilities.**

We also strongly encourage you to follow these offerings and protocols:

## COVID-19 Central @ The U

☎ 801-213-2874 ○ Test weekly for COVID-19, even if asymptomatic

🌐 [coronavirus.utah.edu](https://coronavirus.utah.edu) (<https://coronavirus.utah.edu>) and get a booster when eligible  
○ If you test positive, or are unvaccinated and exposed to COVID-19

### ▸ Drop/Withdrawal Policies

Students may drop a course within the first two weeks of a given semester without any penalties.

Students may officially withdraw (W) from a class or all classes after the drop deadline through the midpoint of a course. A “W” grade is recorded on the transcript and appropriate tuition/fees are assessed. The grade “W” is not used in calculating the student’s GPA.

For deadlines to withdraw from full-term, first, and second session classes, see the U's [Academic Calendar](https://registrar.utah.edu/academic-calendars/index.php) [↗](https://registrar.utah.edu/academic-calendars/index.php).

### ▸ Plagiarism and Cheating

It is assumed that all work submitted to your instructor is your own work. When you have used the ideas of others, you must properly indicate that you have done so.

Plagiarism and cheating are serious offenses and may be punished by failure on an individual assignment, and/or failure in the course. Academic misconduct, according to the University of Utah Student Code,

*“...Includes, but is not limited to, cheating, misrepresenting one’s work, inappropriately collaborating, plagiarism, and fabrication or falsification of information...It also includes facilitating academic misconduct by intentionally helping or attempting to help another to commit an act of academic misconduct.”*

For details on plagiarism and other important course conduct issues, see the U's [Code of Student Rights and Responsibilities](http://regulations.utah.edu/academics/6-400.php) [↗](http://regulations.utah.edu/academics/6-400.php).

### ▸ Course Materials Copyright

**The Content is made available only for your personal, noncommercial educational, and scholarly use.** You may not use the Content for any other purpose, or distribute, post or make the Content available to others unless you obtain any required permission from the copyright holder. Some Content may be provided via streaming or other means that restrict copying; you may not circumvent those restrictions. You may not alter or remove any copyright or other proprietary notices included in the Content.

Please see the [Code of Student Rights and Responsibilities](https://regulations.utah.edu/academics/6-400.php) [↗](https://regulations.utah.edu/academics/6-400.php), Section III.A.5 regarding the [use and distribution of class Content](https://regulations.utah.edu/academics/6-400.php) [↗](https://regulations.utah.edu/academics/6-400.php) and materials. Section III.A.5. prohibits the following:

Sale or distribution of information representing the work product of a faculty member to a commercial entity for financial gain without the express written permission of the faculty member responsible for the course. (“Work product” means original works of authorship that have been fixed in a tangible medium and any works based upon and derived from the original work of authorship.)

## ▸ Safety at the U

The University of Utah values the safety of all campus community members. You will receive important emergency alerts and safety messages regarding campus safety via text message.

For more safety information and to view available training resources, including helpful videos, visit [safeu.utah.edu](http://safeu.utah.edu) (<http://safeu.utah.edu>).

To report suspicious activity or to request a courtesy escort, contact:

### **Campus Police & Department of Public Safety**

📞 801-585-COPS (801-585-2677)

🌐 [dps.utah.edu](https://dps.utah.edu) [↗ \(https://dps.utah.edu/\)](https://dps.utah.edu)

📍 1735 E. S. Campus Dr.  
Salt Lake City, UT 84112

## ▸ Wellness at the U

Your personal health and wellness are essential to your success as a student. Personal concerns like stress, anxiety, relationship difficulties, depression, or cross-cultural differences can interfere with a student’s ability to succeed and thrive in this course and at the University of Utah.

Please feel welcome to reach out to your instructor or TA to handle issues regarding your coursework.

For helpful resources to manage your personal wellness and counseling options, contact:

### **Center for Student Wellness**

📞 801-581-7776

🌐 [wellness.utah.edu](http://wellness.utah.edu) (<http://wellness.utah.edu/>)

📍 2100 Eccles Student Life Center  
1836 Student Life Way  
Salt Lake City, UT 84112

### **Women’s Resource Center**

📞 801-581-8030

🌐 [womenscenter.utah.edu](https://womenscenter.utah.edu) [↗ \(https://womenscenter.utah.edu/\)](https://womenscenter.utah.edu/)

📍 411 Union Building

200 S. Central Campus Dr.  
Salt Lake City, UT 84112

## ▸ Addressing Sexual Misconduct

Title IX makes it clear that violence and harassment based on sex and gender (which includes sexual orientation and gender identity/expression) is a civil rights offense subject to the same kinds of accountability and the same kinds of support applied to offenses against other protected categories such as race, national origin, color, religion, age, status as a person with a disability, veteran's status, or genetic information.

If you or someone you know has been harassed or assaulted, you are encouraged to report it to university officials:

### **Title IX Coordinator & Office of Equal Opportunity and Affirmative Action**

📞 801-581-8365

🌐 [oeo.utah.edu](https://oeo.utah.edu) ➦ (<https://oeo.utah.edu/>)

📍 135 Park Building  
201 Presidents' Cir.  
Salt Lake City, UT 84112

### **Office of the Dean of Students**

📞 801-581-7066

🌐 [deanofstudents.utah.edu](https://deanofstudents.utah.edu) ➦ (<https://deanofstudents.utah.edu/>)

📍 270 Union Building  
200 S. Central Campus Dr.  
Salt Lake City, UT 84112

To file a police report, contact:

### **Campus Police & Department of Public Safety**

📞 801-585-COPS (801-585-2677)

🌐 [dps.utah.edu](https://dps.utah.edu) ➦ (<https://dps.utah.edu/>)

📍 1735 E. S. Campus Dr.  
Salt Lake City, UT 84112

If you do not feel comfortable reporting to authorities, the U's Victim-Survivor Advocates provide **free, confidential, and trauma-informed** support services to **students, faculty, and staff** who have experienced interpersonal violence.

To **privately** explore options and resources available to you with an advocate, contact:

### **Center for Student Wellness**

📞 801-581-7776

🌐 [wellness.utah.edu](http://wellness.utah.edu) (<http://wellness.utah.edu/>)

📍 328 Student Services Building



201 S. 1460 E.  
Salt Lake City, UT 84112

## ▶ Americans With Disabilities Act (ADA)

The University of Utah seeks to provide equal access to its programs, services, and activities for people with disabilities.

All written information in this course can be made available in an alternative format with prior notification to the Center for Disability & Access (CDA). CDA will work with you and the instructor to make arrangements for accommodations. Prior notice is appreciated. To read the full accommodations policy for the University of Utah, please see Section Q of the [Instruction & Evaluation regulations](http://regulations.utah.edu/academics/6-100.php) [↗](http://regulations.utah.edu/academics/6-100.php) (<http://regulations.utah.edu/academics/6-100.php>).

If you will need accommodations in this class, or for more information about what support they provide, contact:

### **Center for Disability & Access**

 801-581-5020

 [disability.utah.edu](https://disability.utah.edu/) [↗](https://disability.utah.edu/) (<https://disability.utah.edu/>)

 162 Union Building

200 S. Central Campus Dr.

Salt Lake City, UT 84112

## ▶ Diverse Student Support

Your success at the University of Utah is important to all of us here! If you feel like you need extra support in academics, overcoming personal difficulties, or finding community, the U is here for you.

### **STUDENT SUPPORT SERVICES (TRIO)**

TRIO federal programs are targeted to serve and assist low-income individuals, first-generation college students, and individuals with disabilities.

Student Support Services (SSS) is a TRIO program for current or incoming undergraduate university students who are seeking their first bachelor's degree and need academic assistance and other services to be successful at the University of Utah.

For more information about what support they provide, a list of ongoing events, and links to other resources, view their website or contact:

### **Student Support Services (TRIO)**

 801-581-7188

 [trio.utah.edu](https://trio.utah.edu)  (<https://trio.utah.edu/>)

 Room 2075

1901 E. S. Campus Dr.  
Salt Lake City, UT 84112

## AMERICAN INDIAN STUDENTS

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The AIRC works to increase American Indian student visibility and success on campus by advocating for and providing student-centered programs and tools to enhance academic success, cultural events to promote personal well-being, and a supportive “home-away-from-home” space for students to grow and develop leadership skills.

For more information about what support they provide, a list of ongoing events, and links to other resources, view their website or contact:

### American Indian Resource Center

 801-581-7019

 [diversity.utah.edu/centers/airc](https://diversity.utah.edu/centers/airc)  (<https://diversity.utah.edu/centers/airc/>)

 Fort Douglas Building 622  
1925 De Trobriand St.  
Salt Lake City, UT 84113

## BLACK STUDENTS

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Using a pan-African lens, the Black Cultural Center seeks to counteract persistent campus-wide and global anti-blackness. The Black Cultural Center works to holistically enrich, educate, and advocate for students, faculty, and staff through Black-centered programming, culturally affirming educational initiatives, and retention strategies.

For more information about what support they provide, a list of ongoing events, and links to other resources, view their website or contact:

### Black Cultural Center

 801-213-1441

 [diversity.utah.edu/centers/bcc](https://diversity.utah.edu/centers/bcc)  (<https://diversity.utah.edu/centers/bcc/>)

 Fort Douglas Building 603  
95 Fort Douglas Blvd.  
Salt Lake City, UT 84113

## STUDENTS WITH CHILDREN



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Our mission is to support and coordinate information, program development, and services that enhance family resources as well as the availability, affordability, and quality of child care for University students, faculty, and staff.

For more information about what support they provide, a list of ongoing events, and links to other resources, view their website or contact:

### **Center for Childcare & Family Resources**

 801-585-5897

 [childcare.utah.edu](https://childcare.utah.edu)  (<https://childcare.utah.edu/>)

 408 Union Building  
200 S. Central Campus Dr.  
Salt Lake City, UT 84112

## **STUDENTS WITH DISABILITIES**


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The Center for Disability and Access is dedicated to serving students with disabilities by providing the opportunity for success and equal access at the University of Utah. They also strive to create an inclusive, safe, and respectful environment.

For more information about what support they provide and links to other resources, view their website or contact:

### **Center for Disability and Access**

 801-581-5020

 [disability.utah.edu](https://disability.utah.edu)  (<https://disability.utah.edu/>)

 162 Union Building  
200 S. Central Campus Dr.  
Salt Lake City, UT 84112

## **STUDENTS OF ETHNIC DESCENT**

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The Center for Ethnic Student Affairs offers several programs dedicated to the success of students with varied cultural and ethnic backgrounds. Its mission is to create an inclusive, safe campus community that values the experiences of all students.

For more information about what support they provide, a list of ongoing events, and links to other resources, view their website or contact:

### **Center for Ethnic Student Affairs**

 801-581-8151

 [diversity.utah.edu/centers/cesa/](https://diversity.utah.edu/centers/cesa/)  (<https://diversity.utah.edu/centers/cesa/>)

 235 Union Building

200 S. Central Campus Dr.  
Salt Lake City, UT 84112

## ENGLISH AS A SECOND/ADDITIONAL LANGUAGE (ESL) STUDENTS

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If you are an English language learner, there are several resources on campus available to help you develop your English writing and language skills. Feel free to contact:

### Writing Center

📞 801-587-9122

🌐 [writingcenter.utah.edu](http://writingcenter.utah.edu) ↗ [\(http://writingcenter.utah.edu/\)](http://writingcenter.utah.edu/)

📍 2701 Marriott Library  
295 S 1500 E  
Salt Lake City, UT 84112

### English for Academic Success (EAS) Program

📞 801-581-8047

🌐 [linguistics.utah.edu](https://linguistics.utah.edu) ↗ [\(https://linguistics.utah.edu/\)](https://linguistics.utah.edu/)

📍 2300 LNCO  
255 S. Central Campus Dr.  
Salt Lake City, UT 84112

### English Language Institute

📞 801-581-4600

🌐 [continue.utah.edu/eli](http://continue.utah.edu/eli) [\(http://continue.utah.edu/eli\)](http://continue.utah.edu/eli/)

📍 540 Arapeen Dr.  
Salt Lake City, UT 84108




## UNDOCUMENTED STUDENTS

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Immigration is a complex phenomenon with broad impact—those who are directly affected by it and those who are indirectly affected by their relationships with family members, friends, and loved ones. If your immigration status presents obstacles that prevent you from engaging in specific activities or fulfilling specific course criteria, confidential arrangements may be requested from the Dream Center.

**Arrangements with the Dream Center will not jeopardize your student status, your financial aid, or any other part of your residence.** The Dream Center offers a wide range of resources to support undocumented students (with and without DACA) as well as students from mixed-status families.

For more information about what support they provide and links to other resources, view their website or contact:


**Dream Center** 801-213-3697 [dream.utah.edu](http://dream.utah.edu)  (<http://dream.utah.edu/>) 200 S. CENTRAL CAMPUS DRIVE  
UNION, ROOM 80  
SALT LAKE CITY, UT 84112

## LGBTQ+ STUDENTS

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The LGBTQ+ Resource Center acts in accountability with the campus community by identifying the needs of people with a queer range of [a]gender and [a]sexual experiences and responding with university-wide services.

For more information about what support they provide, a list of ongoing events, and links to other resources, view their website or contact:


**LGBTQ+ Resource Center** 801-587-7973 [lgbt.utah.edu](http://lgbt.utah.edu) (<http://lgbt.utah.edu/>) 409 Union Building  
200 S. Central Campus Dr.  
Salt Lake City, UT 84112

## VETERANS & MILITARY STUDENTS

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The mission of the Veterans Support Center is to improve and enhance the individual and academic success of veterans, service members, and their family members who attend the university; to help them receive the benefits they earned, and to serve as a liaison between the student veteran community and the university.

For more information about what support they provide, a list of ongoing events, and links to other resources, view their website or contact:

**Veterans Support Center** 801-587-7722 (<http://lgbt.utah.edu/veteranscenter.utah.edu>)  (<http://veteranscenter.utah.edu/>) 418 Union Building  
200 S. Central Campus Dr.  
Salt Lake City, UT 84112

## WOMEN

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The Women's Resource Center (WRC) at the University of Utah serves as the central resource for educational and support services for women. Honoring the complexities of women's identities, the WRC facilitates choices and changes through programs, counseling, and training grounded in a commitment to advance social justice and equality.

For more information about what support they provide, a list of ongoing events, and links to other resources, view their website or contact:

### Women's Resource Center

📞 801-581-8030

🌐 [womenscenter.utah.edu](https://womenscenter.utah.edu) ↗️ (<https://womenscenter.utah.edu/>)

📍 411 Union Building  
200 S. Central Campus Dr.  
Salt Lake City, UT 84112

## INCLUSIVITY AT THE U

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The Office for Inclusive Excellence is here to engage, support, and advance an environment fostering the values of respect, diversity, equity, inclusivity, and academic excellence for students in our increasingly global campus community. They also handle reports of bias in the classroom as outlined below:

*Bias or hate incidents consist of speech, conduct, or some other form of expression or action that is motivated wholly or in part by prejudice or bias whose impact discriminates, demeans, embarrasses, assigns stereotypes, harasses, or excludes individuals because of their race, color, ethnicity, national origin, language, sex, size, gender identity or expression, sexual orientation, disability, age, or religion.*

For more information about what support they provide and links to other resources, or to report a bias incident, view their website or contact:

### Office for Inclusive Excellence

📞 801-581-4600

🌐 [inclusive-excellence.utah.edu](https://inclusive-excellence.utah.edu) ↗️ (<https://inclusive-excellence.utah.edu/>)  
(<http://continue.utah.edu/eli>)

📍 200 S. CENTRAL CAMPUS DRIVE  
UNION, ROOM 70  
SALT LAKE CITY, UT 84112

## OTHER STUDENT GROUPS AT THE U

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To learn more about some of the other resource groups available at the U, check out:

🌐 [getinvolved.utah.edu/](https://getinvolved.utah.edu/) (<https://getinvolved.utah.edu/>)

 [studentsuccess.utah.edu/resources/student-support](https://studentsuccess.utah.edu/resources/student-support)   
(<https://studentsuccess.utah.edu/resources/student-support/>)