

# ITLS 4270/6270 Syllabus

While this provides a general outline of the course plan, we will fine-tune specific readings, assignments, dates, etc. in class each week. As a reminder, class attendance is required. If you miss class, you are responsible for catching up on the information you missed.

Lecture: Wednesdays 1:30-4:00 pm.



## Course Description & Goals

Welcome to the world of tangible, computational crafts where computers are sewable and circuits are made with conductive thread! In this tools course, we will work with hard and soft technologies, like Circuit Playground, to make wearable and interactive projects that merge computing and crafting. More broadly, we will discuss human-centered design processes and experiment with new learning technologies. Through these projects, you will gain hands-on experience with latest maker materials and technologies. While we will meet weekly to discuss course readings, the majority of your time will be spent on learning and making introductory projects and your final project which you will design and document for a DIY community such as Instructables, and provide a recording of your DIY project as if you were teaching a class that can be shared with the community. Graduate students in the course will engage in additional readings concerning learning theories and recent research.

## Course Overview

WEEK 1 | January 20: Intro to Design Part 1 (Makey Makey & Paper Simple Circuits)

WEEK 2 | January 27: Intro to Design Part 2 (Complex Circuit Project)

- [Bring Bad Design Examples to Class](#): **Due Jan 27**
- Send me your mailing address: **Due Jan 27** ([Jenny.Kearl@usu.edu](mailto:Jenny.Kearl@usu.edu))
- [Profile update on Canva](#): **Due Jan 27**
- [Introduction](#) in discussion section: **Due Jan 27**

WEEK 3 | February 3: Design Tradeoffs Human Sensor: Intro (Share Personal Complex Circuit Projects)

- [Complex Circuit Project](#): **Due Feb 3** (LED card)

WEEK 4 | February 10: User Experience & Makers/Makerspaces

WEEK 5 | February 17: Iterative Design (Human Sensor: Programming Design (Human Sensor: Circuit Diagrams & Sewing)

WEEK 6 | February 24: Ideation & Brainstorming (Human Sensor Exhibition & Final Project Intro)

- [Interactive Scratch Experience Design Project](#): **Due Feb 24**
- [Project Proposals for Interaction Sensor Sewing design Blueprint](#): **Due Feb 24** (finalize in class February 24)

WEEK 7 | March 3: Rapid Prototyping (Final Project Development/Brainstorming)

WEEK 8 | March 10: Interaction Design (Final Proposal Workshop & Material Order Forms)

- [Draft Project Proposals for Final Project](#): **Due Mar 10**

WEEK 9 | March 17: Getting User Feedback (Final Project Work)

- [Experience Interactive Toy Sensor Sewing Design Project](#): **Due Mar 17**

WEEK 10 | March 24: Getting User Feedback (Final Project Work)

WEEK 11 | March 31: Getting User Feedback (Final Project Prototype Due)

- [Final Project Prototype/Minimum Viable Products](#): **Due Mar 31**

WEEK 12 | April 7: Responding to User Feedback (Final Project Work)

WEEK 13 | April 14: Final Project Work

- [Final Project User Testing Assignment](#): **Due Apr 14**

WEEK 14 | April 21: Final Project Exhibition

- Final Project Presentation Online: **Due Apr 21** | Email to [kam.christe@gmail.com](mailto:kam.christe@gmail.com)
- [Tutorial](#): **Due Apr 23**
- [Rubric for Final Product](#): **Due Apr 23**
- [Final Project Design Rational and Instructional](#): **Due Apr 23**
- [IDEA Extra Credit](#) **Due Apr 23**

## Course website

You will need to use Canvas extensively in this course, and will be expected to stay connected and up-to-date with that system. All due dates will be kept current in Canvas. Communication outside of class will primarily happen through Canvas announcements, and Slack, so make sure

that your notifications are set up in such a way that you receive these announcements. Please check out the Canvas tutorial videos at this

link: <https://resources.instructure.com/courses/32/pages/canvas-student-tour-videos>, and <https://usu.slack.com> (Links to an external site.)

As a class, you might find it faster and easier to communicate through Slack with the Slack project working group. [Digital Making and Learning Slack Group 4270 & 6270](#)

If you aren't sure how to use Slack here is a quick one-minute intro to Slack. How [to use Slack](#) |

[Your quick start guide | Slack 101](#) (Links to an external site.)

Here is the Zoom link for our weekly class:

Topic: ITLS 4270/6270 Digital Making & Learning

Time: Jan 20, 2021 01:30 PM Mountain Time (US and Canada)

Every day, 14 occurrence(s)

Please download and import the following iCalendar (.ics) files to your calendar system.

Daily: [https://usu-edu.zoom.us/meeting/tZYtd-uprDMoGtwgqA9VznzzyQGJxfOG5Lhh/ics?icsToken=98tyKuGqrjsoG9adshmPRpwQAoiga-vzplxBjbdKmw7EWhZJbBnsL9NIGKp5P\\_-F](https://usu-edu.zoom.us/meeting/tZYtd-uprDMoGtwgqA9VznzzyQGJxfOG5Lhh/ics?icsToken=98tyKuGqrjsoG9adshmPRpwQAoiga-vzplxBjbdKmw7EWhZJbBnsL9NIGKp5P_-F)

Join our weekly Zoom Meeting

<https://usu-edu.zoom.us/j/82002128208?pwd=cmdwaDFGcFZWV29TaXhoaTQvdHY2UT09>

Meeting ID: 820 0212 8208

Passcode: 512888

## Instructor

### Jenny Kearl

Instructor

[jenny.kearl@usu.edu](mailto:jenny.kearl@usu.edu) (M-F) response within 24 hours, S-S 48 hours)

Office Hours: By appointment

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## Course Description and Goals

Welcome to the world of tangible, computational crafts where computers are sewable and circuits are made with conductive thread! In this tools course, we will work with hard and soft technologies, like Circuit Playground, to make wearable and interactive projects that merge

computing and crafting. More broadly, we will discuss human-centered design processes and experiment with new learning technologies. Through these projects, you will gain hands-on experience with latest maker materials and technologies. While we will meet weekly to discuss course readings, the majority of your time will be spent on learning and making introductory projects and your final project which you will design and document for a DIY community such as Instructables, and provide a recording of your DIY project as if you were teaching a class that can be shared with the community. Graduate students in the course will engage in additional readings concerning learning theories and recent research.

## **Shared Values, Goals, Capacities, and Needs for the Semester.**

### **Values**

- Willingness to contribute and ask for help
- Willingness to accept criticism
- Not being attached to what you made
- Direction/Ideation
- Interest/Care
- Respectfully share different opinions
- Adapting to change
- Creating a safe space

### **Goals**

- Collaboration
- Sharing expertise
- Sharing creativity//synergy
- Division of labor
- Sense of fulfillment
- Developing Relationships

### **Values**

- Adobe Creative Cloud
- Constructive Criticism (story creation)
- Learning
- Photo/Video/Audio production
- Languages
- 3D software
- Ideation & Envisioning
- Empathy
- Open-mindedness
- Vulnerability

- Painting/Graphic Design
- Problem Solving
- Coding

## Needs

- Collaboration space
- Space for bringing things together

## Course Overview

**Lecture:** Wednesdays 1:30-4:00 pm.

Week	Topic	Due
1	Intro to Design Part 1 (Makey Makey & Paper Simple Circuits)	
2	Intro to Design Part 2 (Sewable Simple Circuits)	Bring Bad Design Examples to Class January 27
3	Design Tradeoffs (Human Sensor: Intro)	Complex Circuit Project Due January 3
4	User Experience Design (Human Sensor: Circuit Diagrams & Sewing)	
5	Iterative Design (Human Sensor: Programming)	
6	Ideation & Brainstorming (Human Sensor Exhibition & Final Project Intro)	Human Sensor Project Due February 24
7	Rapid Prototyping (Final Project Development)	
8	Interaction Design (Final Proposal Workshop & Material Order Forms)	Project Proposals Due February 24

		(finalize in class February 26)
9	Getting User Feedback (Final Project Work)	
10	Getting User Feedback (Final Project Work)	Final Project Prototype/ Minimum Viable Products Due March 25
11	Getting User Feedback (Final Project Prototype Due)	
12	Responding to User Feedback (Final Project Work)	
13	Final Project Work	Final Project User Testing Assignment Due April 14
14	Final Project Exhibition	Final Project Presentation Due April 21 Final Project Design Rationale & Instructional /Tutorial Due April 28 by 1:30 pm

## Course Objectives

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

1. Understand how Computational Thinking and Design can be incorporated in everyday life.
2. Be able to perform basic design coding.
3. Have a better appreciation of computational crafts and skills and how it can be integrated into our communities.

## Course Website

You will need to use Canvas extensively in this course and will be expected to stay connected and up to date with that system. All due dates will be kept current in Canvas. Communication outside of class will primarily happen through Canvas announcements, and Slack, so make sure that your notifications are setup in such a way that you receive these announcements. Please check out the Canvas tutorial videos at this

link: <https://resources.instructure.com/courses/32/pages/canvas-student-tour-videos>, and [Slack](#). (Links to an external site.)

As a class, you might find it faster and easier to communicate through Slack with the Slack project working group. Digital Making and Learning 4270 and 6270  
If you aren't sure how to use Slack here is a quick one-minute intro to Slack.

## Required Materials

Technologies, crafting supplies, and project materials necessary to successfully complete the projects outlined in this syllabus will be provided, though you may elect to purchase additional materials for your final project.

## Course Resources

We will be using [The Design of Everyday Things](#) **AND** [Don't Make Me Think, Norman 1993 ThingsThatMakeUsSmart \(8\).pdf](#) which you can download here. All other course readings will be provided via Canvas.

## Grading

Class Attendance, Preparation, and Participation	60 pts
Exploration Projects	40 pts
Complex Circuit Project	10 pts
• Human Sensor Project	30 pts
Final Design Project	100 pts
• Project Proposal (5 points)	5 pts
• Prototype	15 pts
User Testing	20 pts

- Presentation 20 pts
- Rationale 20 pts
- Tutorial 20 pts

Late work is handled on a case-by-case basis and is accepted at the Instructor's discretion. I have no obligation to accept your late work, but understand that we're all humans and life happens, so please contact me immediately. When possible, please be proactive rather than reactive in reaching out.

## **Class Attendance, Preparation, and Participation (60 Points)**

This class will be run as design studio during which we discuss relevant themes and make projects.

Attendance is required. It is important that you come to class on time. If you need to miss a class, then you must contact the instructor prior to class to avoid potential impact on your grade. With the exception of extenuating circumstances, you will receive a point deduction in participation if you miss more than one class over the course of the semester.

Active participation. A successful discussion depends on every member of the group actively collaborating as both learners and teachers. We assume that each of us has valuable perspectives and experiences that will inform our collective, developing knowledge about making and learning. We expect that you will have read the texts carefully and will be prepared to actively participate in our discussions. The design portion of the class will involve experimenting with new technologies and crafting your own projects. Successful participation requires that you complete readings and design projects before class, attend class, and make thoughtful contributions about the readings, share your designs, and provide constructive critique to your peers. If you have questions about what I expect in regard to participation, please ask.

## **Exploration Projects (40 Points)**

- Complex Circuit Project (10 points)
- Introduction: Complete Paper and Sewable Circuit project (in class)
- Project: Create your own interactive paper or sewable circuit with a switch and 3 LED's.
- Human Sensor Project (30 points)
  - Introduction: Learn to Sew & Explore MakeCode (in class)
- Project: Small human sensor project with a Circuit Playground, 3 LED lights, and sensor



## Design Project (100 Points)

For the design project you need to design something that fills a practical need in your own life or the lives of others in the community. The design interface(s) and interaction(s) need to be developed through iterative design process that includes at least one round of user testing (but we encourage more!). Your design must also integrate the Circuit Playground using both inputs (e.g., sensors) and outputs (e.g., lights or sound). You are welcome to find inspiration from and remix others' ideas, but we invite you to be creative and design for your specific need/context. We want you to take risks and challenge yourself, but we also want you to complete the project within the given timeframe, so you must get your project proposal approved before beginning construction on your project.

**This project is made up of multiple assignments, including:**

- Proposal (5 points): You are expected to submit your Final Project Proposal online by Monday and present your idea to the class on Wednesday.
- Prototype (15 points): You are expected to present a prototype of your final design project in class.
- User Testing (20 points): You are expected to complete at least one round of user testing.
- Presentation (20 points): You are expected to present a prototype of the final design project and a rough draft of the Instructables video/documentation at our last class meeting.
- Tutorial (20 points): You are expected to document your process and create an Instructables.com entry or Educational Tutorial to guide others on how to make a similar project.
- Design rationale (20 points): You are expected to write up an explanation of your design and pedagogical rationale. This should include explicit connections to course readings and theories and/or from other disciplines. Undergraduates: ~2,000 words Graduates: ~3,000 words

## Grade Scheme

The following grading standards will be used in this class:

<b>Grade</b>	<b>Range</b>
A	100 % to 93.0%
A-	< 93.0 % to 90.0%
B+	< 90.0 % to 87.0%
B	< 87.0 % to 83.0%
B-	< 83.0 % to 80.0%

<b>Grade</b>	<b>Range</b>
C+	< 80.0 % to 77.0%
C	< 77.0 % to 73.0%
C-	< 73.0 % to 70.0%
D+	< 70.0 % to 67.0%
D	< 67.0 % to 60.0%
F	< 59.0 % to 0.0%

## **Library Services**

All USU students attending classes in Logan, at our Regional Campuses, or online can access all databases, e-journals, and e-books regardless of location. Additionally, the library will mail printed books to students, at no charge to them. Students can also borrow books from any Utah academic library. Take advantage of all library services and learn more at [libguides.usu.edu/rc](http://libguides.usu.edu/rc).

## **Classroom Civility**

Utah State University supports the principle of freedom of expression for both faculty and students. The University respects the rights of faculty to teach and students to learn. Maintenance of these rights requires classroom conditions that do not impede the learning process. Disruptive classroom behavior will not be tolerated. An individual engaging in such behavior may be subject to disciplinary action. Read [Student Code Article V Section V-3](#) for more information.

## **University Policies & Procedures**

### **COVID-19 Classroom Protocols**

In order to continue to provide a high standard of instruction at USU, and to limit the spread of COVID-19 during the pandemic, students are asked to follow certain classroom protocols. These protocols are in place not only for your safety but also the safety of the rest of the campus community. You will be asked to clean your desk area at the start of each class, sit in designated seats, wear face coverings, and follow dismissal instructions. There may be individual medical circumstances that prevent some students from using face coverings. These circumstances will be rare, but if they do exist, we ask that everyone be respectful. It is imperative that we each do our part so that on-campus instruction can continue.

## 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](#) 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](#)

## **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](#) 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](#) 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](#)), 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.

## Student 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 \(DRC\)](#) 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. Students who are at a higher risk for complications from COVID-19 or who contract COVID-19 may also be eligible for 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>, (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>, (435) 797-2912, TSC 326,
- Access and Diversity: <http://accesscenter.usu.edu>, (435) 797-1728, [access@usu.edu](mailto:access@usu.edu); TSC 315
- Multicultural Programs: <http://accesscenter.usu.edu/multiculture>, (435) 797-1728, TSC 315
- LGBTQA Programs: <http://accesscenter.usu.edu/lgbtqa>, (435) 797-1728, TSC 3145
- Provost's Office Diversity Resources: <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>

## 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](#).

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

- [Student Conduct](#)
- [Student Code](#)
- [Academic Integrity](#)
- [USU Academic Policies and Procedures](#)
- [Academic Freedom and Professional Responsibility Policy](#)

## 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.

## Mental Health

Mental health is critically important for the success of USU students. As a student, you may experience a range of issues that can cause barriers to learning, such as strained relationships, increased anxiety, alcohol/drug problems, feeling down, difficulty concentrating and/or lack of motivation. These mental health concerns or stressful events may lead to diminished academic performance or reduce your ability to participate in daily activities. Utah State University provides free services for students to assist them with addressing these and other concerns. You can learn more about the broad range of confidential mental health services available on campus at [Counseling and Psychological Services \(CAPS\)](#).

Students are also encouraged to download the [“SafeUT App”](#) to their smartphones. The SafeUT application is a 24/7 statewide crisis text and tip service that provides real-time crisis intervention to students through texting and a confidential tip program that can help anyone with emotional crises, bullying, relationship problems, mental health, or suicide related issues.

Prev month Next monthNovember2020

**\*\*Course Assignments are Not Weighted**

## 2020 Calendar

<b>Sunday</b>	<b>Monday</b>	<b>Tuesday</b>	<b>Wednesday</b>	<b>Thursday</b>	<b>Friday</b>	<b>Saturday</b>
25 Oct.	26 Oct.	27 Oct.	28 Oct.	29 Oct.	30 Oct.	31 Oct.
1 Nov.	2 Nov.	3 Nov.	4 Nov.	5 Nov.	6 Nov.	7 Nov.
8 Nov.	9 Nov.	10 Nov.	11 Nov.	12 Nov.	13 Nov.	14 Nov.
15 Nov.	16 Nov.	17 Nov.	18 Nov.	19 Nov.	20 Nov.	21 Nov.
22 Nov.	23 Nov.	24 Nov.	25 Nov.	26 Nov.	27 Nov.	28 Nov.
29 Nov.	30 Nov.	1 Dec.	2 Dec.	3 Dec.	4 Dec.	5 Dec.