

LINC 478C: PROJECT-BASED TECHNOLOGY PROJECTS NONCREDIT

Foothill College Course Outline of Record

Heading	Value
Effective Term:	Fall 2026
Units:	0
Hours:	2 lecture per week (24 total per quarter)
Advisory:	Experience with internet software tools, browsers, hyperlinks, online media resources, and basic skills using a computer.
Degree & Credit Status:	Non-Degree-Applicable Non-Credit Course
Foothill GE:	Non-GE
Transferable:	None
Grade Type:	Non-Credit Course (Receives no Grade)
Repeatability:	Unlimited Repeatability

Student Learning Outcomes

- Apply physical computing concepts to connect micro-controllers to various external outputs such as LEDs, speakers, motors, etc.

Description

Intended for educators, this course focuses on integrating technology into project-based learning to support educational outcomes across various disciplines. Emphasizing the development of interdisciplinary educational projects, the course covers basic circuitry, physical computing concepts, and the creation and adaptation of technology-enhanced educational projects. Students will gain practical skills in coding, project development, and the application of technology to address real-world educational challenges, fostering an engaging and inclusive learning environment.

Course Objectives

The student will be able to:

1. Understand and utilize basic circuitry and physical computing concepts.
2. Use coding language to control physical-computing devices, and analyze the purpose of coding and programming in educational settings.
3. Build interdisciplinary educational projects, combining skills in making, circuitry, and coding.
4. Apply project-based technology projects to support educational outcomes and foster inclusive learning environments.

Course Content

1. Circuitry and physical computing concepts
 - a. Basic circuitry
 - b. Wiring and soldering
 - c. Inputs and outputs
2. Integration of code
 - a. Basic coding concepts
 - b. Use of existing loops and scripts to build projects
 - c. Modifying codes to meet desired outcomes
 - d. Purpose of coding in educational settings
3. Creation of interdisciplinary projects
 - a. Development of original code to personalize or develop original content
 - b. Integration of circuits and physical computing with other personally created physical items (3-D prints, handcrafted items, etc.)
 - c. Adapt existing projects to develop new and original items or functionality
4. Support educational outcomes
 - a. Identifying educational needs
 - b. Developing projects to support outcomes and inclusion
 - c. Gathering feedback and improving designs

Lab Content

Not applicable.

Special Facilities and/or Equipment

1. When offered on/off campus: Lecture room equipped with projector, whiteboard, and a demonstration computer connected online. Computer laboratories equipped with computers or laptops with internet access.
2. When taught via the internet: Students must have current email accounts and ongoing access to computers with web browsing capability and internet access.

Method(s) of Evaluation

Methods of Evaluation may include but are not limited to the following:

Developing projects utilizing circuitry and physical computing
Presenting their designs and projects to peers
Making constructive contributions to class discussions and peer reviews

Method(s) of Instruction

Methods of Instruction may include but are not limited to the following:

Lecture presentations delivered in student-centered learning style, during which students take notes, follow demonstrations, or complete an activity

Facilitated discussions of live presentations, readings, or video presentations
Student presentations in small group and whole class situations

Representative Text(s) and Other Materials

Instructor-assigned notes, materials, and resources, including instructional materials, open education resources, multimedia, and websites.

Types and/or Examples of Required Reading, Writing, and Outside of Class Assignments

1. Reading assignments include analysis of texts, selected examples, and student projects
2. Writing assignments include a course project and multiple developmental projects, reflections, discussion responses, and peer feedback on projects
3. Outside assignments include project planning and development, participation in online peer collaboration activities, and project development through an iterative process

When taught online, these methods may take the form of multimedia and web-based presentations. Assignments will be submitted online as well.

Discipline(s)

Instructional Design/Technology