

LINC 78B: BLOCK BASED CODING CONCEPTS

Foothill College Course Outline of Record

Heading	Value
Units:	2
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:	Degree-Applicable Credit Course
Foothill GE:	Non-GE
Transferable:	CSU
Grade Type:	Letter Grade (Request for Pass/No Pass)
Repeatability:	Not Repeatable

Student Learning Outcomes

- Build coding projects on a variety of topics to master each concept.
- Learning programming concepts, such as variables, data types, loops, conditionals, and functions using unplugged activities.

Description

This course, designed for educators, provides the foundational computer science concepts using block based computer programming languages, such as Scratch, Blockly, Logo and others. These concepts illustrate the use of scripts, loops, and arrays in computer science, without the need to type or master the syntax of higher level programming languages.

Course Objectives

The student will be able to:

- Learn programming concepts, such as variables, data types, loops, conditionals, functions using unplugged activities
- Build coding projects on a variety of topics to master each concept
- Learn to express creativity and integrate code into other content by creating open-ended coding projects
- Gain confidence in coding independently

Course Content

- Basic programming concepts
 - Variables
 - Data types
 - Loops
 - Conditionals
 - Functions
- Using multiple concepts to develop code to complete a task
 - Building strings of multiple concepts
 - Transitioning from one coding concept to another
- Integrate projects from other disciplines to build ongoing projects
 - Adding geometric shapes to add art concepts to a project
 - Adding graphics to develop game or role playing concepts to a coding project
- Provide opportunities for students to develop their own projects

1. Use of teacher and peer feedback to create engaging projects
2. Testing projects with sample groups

Lab Content

Not applicable.

Special Facilities and/or Equipment

- When offered on/off campus: Lecture room equipped with LCD projector, whiteboard, and a demonstration computer connected online. Computer laboratories equipped with online PCs and/or Macintosh computers, network server access, and 3-D printer(s).
- When taught via the internet: Students must have current email accounts and/or ongoing access to computers with email software, web browsing capability, and access to the World Wide Web.

Method(s) of Evaluation

The student will demonstrate proficiency by:

- Developing a project utilizing work created for the participant's specific purposes, whether educational, business-related or personal.
- Presentation of their web-based design and project to peers.
- Making constructive contributions to class discussions.

Method(s) of Instruction

During periods of instruction the student will be:

- Listening actively to lecture presentations delivered in student-centered learning style by taking notes, following demonstrations, or completing an activity
- Participating in facilitated discussions of live presentations, readings or video presentations
- Presenting in small group and whole class situations

Representative Text(s) and Other Materials

Instructor-assigned notes and materials.

Example textbook:

Krauss, Jane, and Kiki Prottzman. *Computational Thinking and Coding for Every Student: The Teacher's Getting-started Guide*. Thousand Oaks, CA: Corwin, a SAGE, 2017. Print.

Additional information, notes, handouts, syllabus, assignments, tests, and other relevant course material will be delivered by email and on the World Wide Web, and discussion may be handled with internet communication tools.

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

- Each week requires the student to read and analyze selected websites or student projects related to that week's topic.
- Each week's topic requires a written response to a prompt that is turned in to the instructor for review. Each prompt is designed to be a

draft of a section of the student's completed project. Instructor feedback should be reflected in the final product.

C. Each week's topic requires the student to participate in a weekly discussion prompt based on that week's readings and assignment. Students are to respond to other students' responses offering support, suggestions, alternative ideas, and resources.

Discipline(s)

Instructional Design/Technology