LINC 77B: DESIGN THINKING & TINKERING

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

- Define and explain the design thinking process and specify how prototyping is integral to the process.
- Research problems that need solutions that can be prototyped with a 3-D rendering program.

Description

Student participants from community, business, and education practice design thinking, a process that innovators, designers, policy makers, and educators are using to develop innovative and collaborative solutions to real world challenges. Participants will use the design thinking process as they build low resolution prototype models using both physical materials and a 3-D rendering program. Focus is on working individually and in teams, to hone skills of defining problems, collecting information, brainstorming and developing solutions.

Course Objectives

The student will be able to:
A. Define and explain the design thinking process and specify how prototyping is integral to the process
B. Research problems that need solutions that can be prototyped with a 3-D rendering program
C. Communicate the process by which 3-D rendering programs are implemented
D. Apply 3-D rendering programs to the prototyping process in a larger design thinking project
E. Create multiple prototypes for problems that have been identified through the design thinking process

Course Content

A. Design Thinking Process and Ideation Definition and Explanation
1. Empathize, Define the Problem, Ideate, Prototype, Test
2. Ideation Importance and Types
B. Problems That Need Solutions That Can be Prototyped With a 3-D Rendering Program
1. In Education
2. In Business
3. In Industry
4. In Government
C. The Process by Which 3-D Rendering Programs are Implemented
1. Locally/Contextually
2. Community-Based
3. World-Based
D. 3-D Rendering Programs Important to the Prototyping Process in a Larger Design Thinking Project
1. In Education
2. In Business
3. In Industry
4. In Government
E. Creation of Multiple Prototypes for Problems That Have Been Identified Through the Design Thinking Process
1. Partnering/Small Group Prototype Creation
2. Building Community Prototype Creation
3. Contextual Prototype Creation

Lab Content

Not applicable.

Special Facilities and/or Equipment

A. 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 printers.
B. 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:
A. Developing a project utilizing design thinking for the participant's specific purposes, whether educational, business-related or personal.
B. Presentation of their web-based project to peers.
C. Making constructive contributions to class discussions.

Method(s) of Instruction

During periods of instruction the student will be:
A. Listening actively to lecture presentations delivered in student-centered learning style by taking notes, following demonstrations, or completing an activity
B. Participating in facilitated discussions of live presentations, readings or video presentations
C. Presenting in small group and whole class situations
D. Creating prototypes

Representative Text(s) and Other Materials

Instructor-assigned notes and materials.

Example textbook:

Doorley, Scott, and Scott Witthoft. Make Space: How to Set the Stage for Creative Collaboration. Hoboken, NJ: J. Wiley, 2012. Print.

Although this text is older than the suggested "5 years or newer" standard, it is a seminal text in this area of study.

When course is taught online: 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

A. Each week requires the student to read and analyze selected websites or student projects related to that week's topic.

B. 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