

LINC 484: FUNDAMENTALS OF MAKERSPACE DESIGN & INSTRUCTION NONCREDIT

Foothill College Course Outline of Record

Heading	Value
Effective Term:	Fall 2026
Units:	0
Hours:	3 lecture per week (36 total per quarter)
Advisory:	Basic skills using standard computer systems and internet-based technologies.
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

Description

This introductory course in makerspace coordination is for students, teachers, educators, and trainers who are interested in becoming makerspace coordinators in schools, libraries, or business settings. Students will develop foundational knowledge and skills in makerspace design, set-up, and management. Practiced skills include the following: designing engaging spaces with learners in mind; developing learning activities that promote creativity, making, and design thinking; creating policies and procedures to ensure safety, accessibility, and equitable participation; selecting and maintaining equipment; managing instructional materials. Special emphasis is placed on applying best practices for managing and using makerspaces in instructional settings.

Course Objectives

The student will be able to:

1. Identify and describe the attributes of an ideal makerspace, considering its intended functions and impact on users.
2. Research and compare different types of makerspaces, taking into account factors such as location, audience, purpose, and funding.
3. Practice using a "maker mindset" and making in a variety of contexts, while engaging in ongoing documentation and reflection.
4. Determine critical roles required for the development and operation of a makerspace, and develop a plan to engage and manage a makerspace team.
5. Develop and articulate a specific vision for a makerspace, taking into account its purpose and users.
6. Use a design thinking approach to identify and empathize with potential users of a makerspace, collecting and analyzing both concrete and anecdotal data.
7. Assess existing resources, programs, and offerings within the community through research and data collection methods.

8. Consider global trends and best practices and create connections between makerspace activities and current events or global issues.
9. Create a thematic structure for organizing makerspace materials, equipment, and activities, and draft a design plan for this structure.
10. Identify and select appropriate equipment and materials for a makerspace, considering budget, space, and audience.
11. Develop policies and procedures related to safety and organization, effectively communicating them to users.
12. Use a variety of methods to craft makerspace challenges and activities to encourage user engagement.

Course Content

1. Attributes
 - a. Personalized
 - b. Deep
 - c. Empowering
 - d. Equitable
 - e. Differentiated
 - f. Intentional
 - g. Inspiring
2. Different makerspaces
 - a. Educational spaces, including both lower- and upper- grade levels and adult education
 - b. Manufacturing spaces, corporate, and production facilities
 - c. Hobby and design spaces
 - d. Artistic production spaces
 - e. Virtual spaces
3. Practice making
 - a. Maker mindset
 - b. Design and engineering cycle
 - c. Tinkering to learn
 - d. Design challenges
 - e. Iteration
 - f. Cataloging progress through reflection
4. Critical roles
 - a. Coordination and management
 - b. Funding and fundraising
 - c. Equipment and maintenance
 - d. User interaction and training
 - e. Organizational structure outline
 - f. Recruitment planning
5. Articulate a vision
 - a. Organizational context and organizational goals/mission statement
 - b. Audience context and needs
 - c. Identify defining characteristics
 - d. Call to action
 - e. Vision display plan
6. Understand users
 - a. Potential user qualities, cultural and linguistic backgrounds, and accessibility needs
 - b. Data sampling and collection methods
 - c. Organizing and interpreting anecdotal data

- d. Data visualization methods
- e. Drawing conclusions from data
- 7. Community resources
 - a. Research methods
 - b. Community outreach
 - c. Evaluating programs and offerings
 - d. Formative assessments
 - e. Applying and interpreting standards
- 8. Global trends
 - a. Current events
 - b. Broad themes
 - c. Global challenges
 - d. User interests and needs
 - e. Meaningful making
 - f. Developing introductions to design challenges
- 9. Thematic structure
 - a. Identifying themes
 - b. Spatial organization
 - c. Equipment placement considerations
 - d. Materials placement considerations
 - e. Design plan
- 10. Equipment and materials
 - a. Funding sources
 - i. Fundraising and donation resources
 - ii. Existing and recycled resources
 - iii. Digital and open educational resources
 - b. Tools
 - c. Devices
 - d. Equipment considerations
 - i. Mobility
 - ii. Open-ended exploration opportunities
 - iii. Audience needs and interests
 - iv. Empowerment and engagement potential
 - v. Relevance to community and themes
 - vi. Maintenance needs and costs
 - e. Budget development
- 11. Policies and procedures
 - a. User information collection and organization policies
 - i. Membership information
 - ii. Liability information
 - iii. Training information
 - iv. Medical and emergency information
 - b. Safety
 - i. Equipment risks
 - ii. Tool risks
 - iii. Space use
 - iv. Weapon creation policies
 - c. Materials
 - i. Organizational structures
 - ii. Reservations
 - iii. Responsible use
 - iv. Check in/out procedures
 - v. Access policies
 - d. Communication of policies and procedures

- i. Membership forms
- ii. Orientations
- iii. Displays and signage
- iv. Digital communication and archive
- 12. Challenges and activities
 - a. Mentors
 - b. Guest presentations
 - c. Project menus
 - d. Transliterate making
 - e. Activity stations
 - f. Video challenges
 - g. SCAMPER Method

Lab Content

Not applicable.

Special Facilities and/or Equipment

When taught via the internet: Students must have current email accounts and/or ongoing access to internet-capable computers or tablets.

Method(s) of Evaluation

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

Designing and developing makerspace plans, products, and projects
 Presenting the products or projects to peers, capturing feedback, and using it for revision and reflection
 Making constructive, inclusive contributions to class discussions and peer-review feedback

Method(s) of Instruction

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

The student will engage with course concepts through multimodal instructional materials offered in accessible formats, supplying multiple means of representation
 The student will observe instructor-guided demonstrations and then apply skills using a modality of their choice (e.g., digital, visual, or written), providing multiple means of action and expression
 The student will co-construct knowledge by participating in synchronous or asynchronous discussions, peer feedback, and collaborative activities that honor diverse cultural and linguistic assets, ensuring multiple means of engagement

Representative Text(s) and Other Materials

Klapwijk, Remke M., Jianjun Gu, Qiuyue Yang, and Marc J. de Vries. [Maker Education Meets Technology Education: Reflections on Good Practices](#). 2023.

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. Writing assignments include a major course project and multiple developmental projects, online discussion response, and critical analysis of peers' projects.
2. Outside assignments include conducting project development, planning, reading, and developing the project through an iterative process.
3. When taught online these methods may take the form of video, audio, animation, and webpage presentations. Writing assignments are completed online.

Discipline(s)

Instructional Design/Technology