

IDS 1940 – Creativity & Design Thinking for Innovation

Spring 2026, 2 Credits

Course Meeting Times & Locations

- 3D47/16930: Mondays, Periods 8-9, 3:00 – 4:55 pm – CSE #305
- 2D12/16705: Wednesdays, Periods 3-4, 9:35 – 11:30 am – CSE #305
- 2C95/12591: Wednesdays, Periods 8-9, 3:00-4:55pm – CSE #333

Instructor

- Charlie Cummings, MFA
- Office: CSE 0360
- Email: charlie@ufl.edu
- Office Hours: Refer to Canvas & By Appointment

Course Description

IDS 1940 focuses on building creative confidence through the design thinking process. Students explore and develop their own creative processes, experience collaborative creative problem solving in multidisciplinary teams, and practice prototyping innovative solutions to problems through sustainable prototyping, laser cutting, 3-D modeling/printing, and Arduino. Experiential learning activities in the course offer the necessary background for *IDS 1359 Innovation in Action*, the next course in the Innovation Academy (IA) minor.

The course balances instructor-led presentations, active dialogue, small group work, and hands-on activities. Common core content will be taught across all course sections; individual instructors will provide their own unique class experiences and offer a variety of experiential learning exercises. Learning in this course will occur in many ways: presentations; discussions; exercises; as well as project-based learning that involves observing, diagramming, sketching, and building.

Learning Outcomes

1. DISCOVER problems and creative solutions.
 - a. Define creativity.
 - b. Demonstrate problem-finding skills.
 - c. Effectively use research skills.
 - d. Recognize mindsets & barriers to creativity.
2. PERCEIVE critical & creative
 - a. Assess personal creative ability.
 - b. Apply 21st-century skills.
 - c. Demonstrate empathy in design thinking.

3. IDEATE new ideas through the design thinking process.
 - a. Define the design-thinking process.
 - b. Apply creative-thinking tools.
 - c. Produce novel, valuable innovations.
4. MAKE/CONNECT: Pitch innovative ideas & prototypes.
 - a. Develop basic skills in 3-D printing, laser cutting, and Arduino.
 - b. Experience iteration.
 - c. Create prototypes.
 - d. Pitch ideas.

Required Materials & Equipment

Item	Notes
Textbook	Kelley, D., & Kelley, T. (2013) <i>Creative confidence: Unleashing the creative potential within us all</i> .
Arduino Starter Kit: <i>ELEGOO Upgraded UNO R3 Project Most Complete Starter Kit w/Tutorial Compatible with Arduino IDE (63 Items) V2.0</i>	DO NOT ORDER PRIOR TA CHECK-IN! More information will be shared in class prior to ordering through Amazon .
Idea book, 3x3 Post-it notepad, dry-erase marker	Used for ideation & brainstorming exercises
Software	Adobe Illustrator (\$34.49/month), Autodesk Fusion 360 (free student account)
Arduino tutorials	CD or web access (will discuss in class)
Microsoft Whiteboard, PowerPoint, Word, NaviGator AI	Required
Laptop/Tablet/ Computer with camera, mic, internet	For Canvas, Zoom, Fusion 360, etc.
Budget for prototyping/3D printing/Additional AI or Arduino tools	Not to exceed \$30 per student

NOTE: Students may be using small power hand tools, exacto knives, hot glue guns, etc. Students are required to participate in in-class demonstrations and/or video tutorials to learn appropriate use of tools. Tools should be handled with respect and care and utilized for intended purposes only.

Participation and Engagement Policy

Participation and engagement, both in and outside of class, help students make the most of their Innovation Academy experience.

This class will meet in person during the scheduled class time. Students are also expected to log in to the Canvas course page each week to review the current materials.

Expectations for Participation

- Coming to class prepared and having completed all assigned module work.
- Being ready to discuss required readings and videos.
- Making meaningful contributions to class discussions and feedback sessions.
- Completing all individual and group activities.
- Actively participating in group work.
- Applying what you have learned in class to assigned projects.

This course is experiential—you will learn by doing. Active dialogue, small group work, and hands-on exercises are essential to the learning process and to the overall design thinking experience.

During class, please avoid texting, web surfing, or using electronics for non-course activities.

Students are also expected to complete all class assignments, readings, and participate in group meetings as required by their team.

Because this course emphasizes engagement and collaboration, a significant part of the final grade is based on participation.

Earning Full Participation Credit

1. Consistently attend class and come well prepared.
2. Start or contribute to discussions relevant to class topics.
3. Engage regularly in class discussions and feedback sessions.
4. Take initiative to find and share additional resources related to course themes.
5. Model good classroom citizenship, including listening respectfully and responding appropriately to others.

Innovation Academy Speaker Series

To further enrich course learning, students will have the opportunity to learn from industry experts who will be invited to share their stories and experiences relevant to the course material. There are two required events in the spring semester. Specific information regarding date/time will be shared in class.

Assignments & Grading

Participation (25 %)

- Attendance/Participation (200 pts)
- Canvas Profile & Notifications (50 pts)
- Technical Assistant Check-ins (2 × 50 pts)
- Read/Watch/Apply (3 x 100 pts)
- Speaker Series (2 × 100 pts)
- Peer/Self Evaluations (2 × 100 pts)

Individual Innovative Technology Literacy & Skills Development (25 %)

- Adobe Illustrator (100 pts)
- Fusion 360 tutorials (4 sets: 120-180 pts each)
- Arduino tutorials (4 sets: 200-260 pts each)

Challenges (50 %) (2 challenges - each includes: research, ask-the-experts, individual prototype & pitch, read & watch, team prototype & pitch.)

- Research (100 pts)
- Interviews (100 pts)
- Individual Project (300 pts)
- Team Project (500 pts)

Grading Scale

GRADE	%
A	94–100
A–	90–93
B+	87–89
B	83–86
B–	80–82
C+	77–79
C	73–76
C–	70–72
D+	67–69
D	63–66
D–	60–62
E	<60

A minimum grade of C is required for Innovation minor credit.

Complete/Incomplete Grades

- Submissions that fulfill all tutorial skills development exercises, documentation and submission guidelines will receive a Complete and full credit for the assignment.
- Submissions that do not successfully fulfill all tutorial skills development exercises, documentation and submission guidelines will receive an Incomplete and no points.
- Incomplete assignments may be resubmitted for regrading until the assignment closes.

Read the Directions

- Read all directions for all assignments, including method of submission (i.e., Canvas, in class, individual, team), date and time due, format/file extension (i.e., pdf, docx, jpg/jpeg, mp4, stl, ppt). Only formats compatible with Canvas will be accepted in Canvas (i.e., **no HEIC*, Keynote, Pages files**).
 - **Canvas does not support Apple's HEIC photo format. **If using an iPhone to document your work, you must convert the images to jpeg format before uploading.***
 - **Files that are submitted incorrectly will not be graded.**
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Academic Policies and UF Campus Resources

- Information about grading and attendance policies, support for students with disabilities, course evaluations, the Honor Code, and other campus resources can be found at <https://syllabus.ufl.edu/syllabus-policy/uf-syllabus-policy-links/>
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Intellectual Property

- UF does not claim ownership of student projects.
 - For licensing help, visit the Technology Licensing Office at <https://innovate.research.ufl.edu/tech-licensing/>.
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Key Dates

Week	Dates	Topics	Due
1	1/12-16	Introductions, Syllabus review, Intro to Workplace Competencies, Overview of Design Thinking, Intro to Adobe Illustrator laser cut Nametag assignment	Purchase textbook & other supplies*, Skills survey, Canvas profile, AI assignment <i>*Arduino Kit purchase requires TA consultation later in semester per Canvas</i>
2	1/19-23	Active Learning, Following Directions, Design Jam (nametag), Fusion 360 intro	Fusion 360 TA check-in <i>*1/19 is a holiday; students still responsible for work due in Canvas</i>
3	1/26-30	Problem Solving & Sustainable Prototyping Workshop, Assign teams	Reading & Multimedia in Canvas/Fusion 360 tutorials, Kelley Ch. 1-2, Nametag file due
4	2/2-6	Intro to Challenge 1 & 3D Modeling/Printing, Discover (Research)	Reading & Multimedia in Canvas/Fusion 360 tutorials, Kelley Ch. 3-6, Set up Notebook LM & download articles
5	2/9-13	Challenge 1 Perceive (Interviews) Pencil Sketch Day (bring wooden pencil)	Bug List Reading & Multimedia in Canvas/Fusion 360 tutorials
6	2/16-20	Problem Finding/Design Thinking Process	Reading & Multimedia in Canvas/Fusion 360 tutorials, Arduino TA check-in
7	2/23-27	3D individual project presentations	Reading & Multimedia in Canvas/Fusion 360 tutorials, Individual 3D project presentations
8	3/3-6	3D project team workday in class	Final 3D prototype Fusion files due by end of week, Complete Arduino Lessons
9	3/9-13	Team Pitch Prep, Finalize Prototypes as needed, Intro to Arduino	Complete all Arduino Lessons listed in Canvas, Kelley, Ch. 7-8
	3/16-20	Spring Break	
10	3/23-27	Final 3D team pitches	Complete all Arduino Lessons listed in Canvas, Final 3D team pitch and presentation

11	3/30-4/3	Intro to Challenge 2 Fun with Arduino	Complete all Arduino Lessons listed in Canvas
12	4/6-10	Arduino Project 2 Team Work	Speaker Series #2 this week (TBA)
13	4/13-17	Arduino individual project presentations Arduino Project 2 Team Work	Individual Project Presentation & Prototype
14	4/20-22*	Final Arduino team pitches	Final Arduino team pitch and presentation, Course evaluations

*4/22 is the last day of UF classes.