IDS 1940
CREATIVITY & DESIGN THINKING FOR INNOVATION - MAYNOOTH

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.

Course Goals & Objectives/Policies

DISCOVER PROBLEMS AND CREATIVE SOLUTIONS	PERCEIVE CRITICAL & CREATIVE THINKING SKILLS	IDEATE NEW IDEAS THROUGH THE DESIGN THINKING PROCESS	MAKE/CONNECT PITCH INNOVATIVE IDEAS & PROTOTYPES
● Define creativity ● Demonstrate problem-finding skills ● Effectively utilize research skills ● Recognize mindsets & barriers to creativity in individuals and teams	● Examine perceptions of personal creative ability ● Demonstrate use of 21st century skillset ● Demonstrate empathy in the design thinking process	● Define the design thinking process ● Apply creative thinking tools to design thinking ● Develop novel & valuable innovations individually and with interdisciplinary teams	● Become oriented to the 3D printing, laser cutting, and Arduino software and hardware ● Experience the iteration process ● Create prototypes ● Pitch ideas

Required Course Materials

- Kelley, D., & Kelley, T. (2013). *Creative confidence: Unleashing the creative potential within us all*. NY: Crown Publishing Group. ISBN: 978-0-385-34936-9.
- Elegoo EL-KIT-001 UNO R3 Project Complete Arduino Starter Kit *(A TA check-in has been set up to assist with ordering the kit.) The kit is £59.99 + shipping; approx. 2-day delivery in Maynooth when ordered via Amazon.ie.)*

You will also need:
- Idea/Sketch Book for brainstorming, diagramming, & idea generation
- One 3"x 3" post-it notepad
- At least one dry-erase marker
- Autodesk Student/Education* account for Fusion 360 (*free) - *set up with Gatorlink e-mail* **(See instructions in Canvas assignment before setting this up.)**
- Access to Adobe Acrobat Reader (https://get.adobe.com/reader/)
- Access to Adobe Illustrator (for nametag assignment) *(Free trial period requires a credit card. Be sure to **cancel at the end of the trial** to avoid unwanted charges.)*
- Access to Arduino tutorials and Arduino IDE *(Instructor will assist in class.)*
- Access to Microsoft Suite/Google Apps
- Tablet, laptop, or desktop computer with camera, microphone, and internet access for on-line coursework (i.e., Canvas, Zoom, Fusion 360, PowerPoint, Microsoft Word/Whiteboard, Google Notebook LM, Adobe PDF, etc.). And if your computer only has Thunderbolt 3 (USB C) ports, you will need to purchase a USB C to USB adapter. See UF IA Computer Requirements for more information: https://innovationacademy.ufl.edu/resources/ia-computer-requirements/
- Computer mouse with 3 buttons (or 2 buttons and wheel)
- Camera and video recording device (i.e., smartphone)
- 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.

Attendance/Participation/Engagement

While studying abroad, you are expected to attend and participate in all classes, assignments, labs, recitations, and field trips as scheduled by your program director and/or host institution. Skipping a class is considered very rude in some cultures, and may not be permitted on many study abroad programs. Please speak with your on-site director if you might need to miss class for any reason. Consult the Canvas page for class material and obtain any necessary information regarding class or assignments from another class member or a member of your team for any material missed.

Participation & engagement in & outside of class helps students make the most of their IA experience. This class will meet in person during the scheduled class time. Students are expected to log on to the Canvas course page daily and review the current course material. Participation is defined as coming to class having completed all module work; being prepared to discuss required readings/videos; initiating meaningful contributions to class discussions and feedback sessions; fully completing all individual and group class activities; actively engaging in group work; and demonstrating the ability to apply class learning to assigned projects. This course is highly experiential and requires active dialogue, small group work, and hands-on-exercises to facilitate the learning process and to get the most out of the IA design thinking experience. Texting, web surfing, or using electronics for non-course activities are not acceptable during class. Students are expected to complete all class assignments, readings, and participate in small group meetings as determined by the team. Consequently, a significant percentage of the final grade will result from participation.

Students who receive full credit for participation: 1) Consistently come to class well-prepared; 2) Initiate discussion relevant to class topics; 3) Actively and regularly contribute to class discussions and feedback sessions; 4) Take initiative to investigate and share relevant material not explicitly assigned; 5) Model good classroom citizenship including listening without interrupting and responding to others respectfully and appropriately.

E-mail and Course Announcements

E-mail & Announcements contain crucial course information. As stated by UF & the IA Handbook, students are responsible for checking email and e-Learning for course communications *at least once every 24 hours*. Instructors will not be held accountable for students who are unresponsive to electronic communications about coursework that could impact students' grades. If students are not receiving regular emails from e-Learning or faculty, they should check their "clutter" inbox in the UF email system to make sure course emails are not being incorrectly marked. The notification settings in Canvas should be set up for students to be notified of due dates, announcements, submission comments, conversations, and membership updates.

Assignments & Grading Scale

<u>**READ THE DIRECTIONS**</u> 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**). <u>**Files that are submitted incorrectly will not be graded.**</u>

COMPLETE/INCOMPLETE GRADES: If an assignment is graded based on a Complete/Incomplete grading scheme, then 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.

*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.

ASSIGNMENT CATEGORY WEIGHTS & GRADING SCALE
Course Engagement   20%
    Active Class Participation (100 pts)
    TA Check-ins (2@50 pts each)
    Laser cut name tag/stand (100 pts)
    Canvas Profile & Notifications (50 pts)
    Self /Peer Evaluations in Feedback Fruits (3@100 pts each)
    Read & Watch: Apply/Analyze/Evaluate (3@100 pts each)

Technical Literacy & Skill Development   20% *see note above for complete/incomplete grades
    Fusion 360 tutorials (4 sets @ 100 pts each)
    Arduino Tutorials (4 sets @ 100 pts each)

Challenge 1   20%
Challenge 2   20%
Challenge 3   20%

    Each challenge above includes:
    Discover (Research) Assignment (100 pts)
    Perceive (Interview) Assignment (100 pts)
    Individual Project - Ideate/Make/Connect (300 pts)
    Team Project - Ideate/Make/Connect (500 pts)

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

*Note: the IA minor courses must be completed with a minimum grade of C and no S-U. For additional information on UF grade policies see:
https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx

Intellectual Property

To further understand University of Florida intellectual property policies, visit the Office of Technology Licensing http://www.research.ufl.edu/otl/ OTL is available to assist students with copywriting and licensing of an original idea, and in releasing those rights to the owner if and when it is applicable.

Accommodations for Disabilities

Students with disabilities who experience learning barriers and would like to request academic accommodations should connect with the Disability Resource Center. See the "Get Started With the DRC" webpage on the Disability Resource Center site. It is important for students to share their accommodation letter with their instructor and discuss their access needs as early as possible in the semester.

Technology Support

If you have any technical issues, including issues with Canvas in e-learning please immediately contact the UF Help Desk at helpdesk@ufl.edu; 352-392-HELP (4357) and select option 2; or the UF Help Desk website at: http://helpdesk.ufl.edu/

Any requests for make-ups due to technical issues MUST be accompanied by the ticket number received from LSS when the problem was reported to them. The ticket number will document the time and date of the problem. **You MUST e-mail your instructor within 24 hours of the technical difficulty if you wish to request a make-up**.

UF Academic Honor Code

Every University Student is subject to the following Honor Pledge: *We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honor and integrity by abiding by the Honor Code. On all work submitted for credit by students at the University of Florida, the following pledge is either required or implied: "On my honor, I have neither given nor received unauthorized aid in doing this assignment."*

The Honor Code (https://policy.ufl.edu/regulation/4-040/) specifies several behaviors that are in violation of this code and the possible sanctions. Review the most up-to-date version for more information on violations of the Student Honor Code. If you have any questions or concerns, please consult with the course instructor.

You are expected to do your own work. Cheating and plagiarism are not tolerated in this course. Instances of unacceptable academic behavior will be referred to the Office of Student Conduct & Conflict Resolution.

The use of generative AI tools (e.g., ChatGPT, Dall-e, etc.) is permitted for: brainstorming and refining your ideas; fine tuning your research questions; finding information on your topic; drafting an outline to organize your thoughts; or checking grammar and style. The use of AI is not permitted for: impersonating you on discussion boards; writing sentences, paragraphs,

papers, or presentations to complete assignments. If you have questions as to whether AI is permitted for other reasons, please consult with your course instructor.

Faculty Evaluations

Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via GatorEvals. Guidance on how to give feedback in a professional and respectful manner is available at https://gatorevals.aa.ufl.edu/students/. Students will be notified when the evaluation period opens and can complete evaluations through the email they receive from GatorEvals, in their Canvas course menu under GatorEvals, or via https://ufl.bluera.com/ufl/. Summaries of course evaluation results are available to students at https://gatorevals.aa.ufl.edu/public-results/.

UF Campus Resources

HEALTH AND WELLNESS

U Matter, We Care: *If you or someone you know is in distress, please contact umatter@ufl.edu, 352-392-1575, or visit U Matter, We Care website to refer or report a concern and a team member will reach out to the student in distress.*

Counseling and Wellness Center: *Visit the Counseling and Wellness Center website or call 352-392-1575 for information on crisis services as well as non-crisis services.*

University Police Department: *Visit UF Police Department website of call 352-392-1111 (or 9-1-1 for emergencies.*

ACADEMIC RESOURCES

e-Learning Technical Support, 352-392-4357 (select option 2) or e-mail to helpdesk@ufl.edu; http://helpdesk.ufl.edu/

Career Connections Center, Reitz Union, 352-392-1601. Career assistance and counseling. https://career.ufl.edu

Library Support, http://cms.uflib.ufl.edu/ask Various ways to receive assistance with respect to using the libraries or finding resources.

Teaching Center, 1317 Turlington Hall, 392-2010 or to make appointment 392-6420. General study skills and tutoring. https://academicresources.clas.ufl.edu/

Writing Studio, *Day (9:30am-3:30pm) 2215 Turlington Hall, 352-846-1138; Evening (5-7pm) 1545 W. University Avenue (Library West #339). Help brainstorming, formatting, and writing papers.* http://writing.ufl.edu/writing-studio/

Maynooth University Campus Resources

Security can be contacted 24 hours a day on the following numbers:...

    (01) 7083929

Local Police Stations

    Maynooth - 01 6292380

    Leixlip   - 01 6667800

Emergency numbers:

Campus Switchboard (9.00am to 5.00pm)	01 7086000
Garda Emergency	999 or 112
Garda Confidential Line - Free Phone	1800666111
Crime Victim Helpline	1850211407
Rape Crisis Centre - Free Phone	1800778888
Woman's Aid - Free Phone	1800341900
Drugs/HIV Helpline - Free Phone	1800459459

Week #	Class Date	Class #	Introduce in class	Class Activity	Due by Midnight	TA Office Hours
Week 1	Monday 9/8 AM	1	Challenge 1, Challenge 1: Discover, Arduino check-in, Team Skills Survey	Syllabus, introductions	Team Skills Survey, Canvas settings	
	Tuesday 9/9 AM	2	Name Tags, Individual Sustainable Prototype and Pitch	Challenge 1 Teams introduction	Arduino check-in	Tuesday, September 9 – 8:00-10:00pm (Arduino Check-in 8:00-9:00pm)
	Wednesday 9/10 AM	3	Challenge 1: Perceive		Challenge 1: Discover	
	Thursday 9/11 AM	4	Book Discussion: Preface, Introduction, Chapters 1-3 Sustainable Prototyping Fusion Tutorials		Name Tags, Fusion Check-in	Thursday, September 11 – 8:00-10:00pm (Fusion Check-in 8:00-9:00pm)
	Thursday 9/11 PM	5	Anthony Cleary	Guest Lecture		
	Friday 9/12 - Dublin Activities	No class				Friday, September 12 – 8:00-10:00pm

Week #	Class Date	Class #	Introduce in class	Class Activity	Due by Midnight	TA Office Hours
Week 2	Monday 9/15 – Dublin Academic Visits	No class			Fusion 2-6 due, Challenge 1: Perceive	Monday, September 15 – 8:00-10:00pm
	Tuesday 9/16 AM	6	Design Thinking Process for Challenge 1	Challenge 1: Ideation		
	Tuesday 9/16 PM	7	Individual project guidelines/ example	Book Discussion: Chapters 4-5, Team project initial feedback	Individual Sustainable Poster, Prototype **Due 1pm Wednesday**	
	Wednesday 9/17 AM	8		Project Prep Time in Class	Fusion 7-10 due	
	Wednesday 9/17 PM	9		Individual Sustainable Prototype Pitches	Challenge 1 Team posters, prototypes	Wednesday, September 17 – 8:00-10:00pm
	Thursday 9/18 AM	10		Challenge 1 Team Pitches. Feedback Fruits Opens.	Feedback Fruits post reviews	Thursday, September 18 – 8:00-10:00pm
	Friday 9/19 - Galway Friday - Sunday	No class				
Week 3	Monday 9/22 AM	11	Challenge 2, Challenge 2: Discover	Challenge 2 Teams introduction	Feedback Fruits read reviews	
	Tuesday 9/23AM	12			Fusion 11-15	Tuesday, September 23 – 8:00-10:00pm
	Wednesday 9/24 AM	13	Challenge 2: Perceive		Challenge 2: Discover	Wednesday, September 24 – 8:00-10:00pm
	Thursday 9/25 AM	14	Arduino Tutorials (London students should NOT take kit with them)		Fusion 16-18	Thursday, September 25 – 8:00-10:00pm
	Friday 9/26 AM	15	Assign 3D Bug list			

Week #	Class Date	Class #	Introduce in class	Class Activity	Due by Midnight	TA Office Hours
Week 4	Monday 9/29 - London Trip	No class				
	Tuesday 9/30 AM	16	CC Intro, measurement to sketch to model, Challenge 2 Individual Prototype	3D Modeling from Life demo, Bug list activity	Arduino Set 1, Challenge 2: Perceive	Tuesday, September 30 – 8:00-10:00pm
	Wednesday 10/1 PM	17	Challenge 2 team project	Challenge 2: Ideation		Wednesday, October 1 – 8:00-10:00pm
	Thursday 10/2 AM	18		Individual 3D Prototype Pitches	Arduino Set 2 due	Thursday, October 2 – 8:00-10:00pm
	Friday 10/3 FoodCloud & Hospital visits	No class				
Week 5	Sunday 10/5				Team 3D Model due - tentative	
	Monday 10/6 AM	19	Challenge 3, Challenge 3: Discover	Challenge 3 Teams Introduction	Arduino Set 3	Monday, October 6 – 8:00-10:00pm
	Tuesday 10/7 AM	20				
	Wednesday 10/8 AM	21	Challenge 3: Perceive		Challenge 3: Discover, Arduino set 4	Wednesday, October 8 – 8:00-10:00pm
	Thursday 10/9 AM	22		Challenge 2 Team Pitches Arduino Activities	Feedback Fruits Challenge 2 part 1	Thursday, October 9 – 8:00-10:00pm
	Friday 10/11 Belfast Trip	No class				

Week #	Class Date	Class #	Introduce in class	Class Activity	Due by Midnight	TA Office Hours
	Sunday 10/12				Challenge 3: Perceive	
Week 6	Monday 10/13 AM	23	IOT Individual Prototype Challenge 3 team project	Challenge 3 Ideation	Feedback Fruits Challenge 2 part 2	Monday, October 13 – 8:00-10:00pm
	Tuesday 10/14 AM	24				Tuesday, October 14 – 8:00-10:00pm
	Wednesday 10/14 AM	25				
	Wednesday 10/15 PM	26				Wednesday, October 15 – 8:00-10:00pm
	Thursday 10/16 AM	27		Individual IOT Pitches		Thursday, October 16 – 8:00-10:00pm
	Thursday 10/16 PM	28				
	Friday 10/17 AM	29		Team IOT Pitches	Feedback fruits TBA	

Refer to Canvas for due dates/times for assignments and any updates.

This schedule is fluid and subject to change as needed to make the most of our experience here in Maynooth. We will adjust together, as a class. Adaptability is an important skill!