TE 510: Advanced Creativity

Technology Entrepreneur Center
GRAINGER ENGINEERING

Fall 2022
- **4 credit hours**
- **Tues./Thurs.**
- **12:30-1:50pm**
- **2320 Campus Instructional Facility**

Instructor
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Office Hours
Sign up available at
https://calendly.com/kjahnke/officehours

Course Purpose and Description

The purpose of this course is to **enhance your creativity** through theory and application. Creativity is a necessary skill in any professional endeavor. Creativity is enhanced by becoming proficient with a set of techniques, developing a mindset that favors creative behaviors, and by establishing a lifestyle that promotes having ideas and bringing them to be.

This course explores a wide range of topics including the foundations of creativity, the development of creative confidence and motivation, creativity assessment, ideation techniques, and the role of creativity and innovation in academia, industry, and entrepreneurship. This class will use readings to develop content knowledge and fuel curiosity as well as in-class activities and individual and team assignments to apply learning and enhance creativity. Students will also hear from guest speakers who have utilized creativity principles in their respective domains.

One assignment, the Semester Project, will enable students to develop an innovative technical solution to a self- or team-identified contextualized problem. Students are encouraged to explore their unique fields of study in greater depth to understand and identify unique problem opportunities. Students are expected to have an undergraduate degree in a technical field.

Learning Objectives

Upon completion of this course, you will be able to:

1. Describe a framework for creativity and apply it to multiple problem-contexts,

2. Identify problems and opportunities for improvement and understand the complex, contextual framework in which they exist,

3. Apply a set of techniques to generate novel and imaginative ideas and delay decision-making,

4. Systematically evaluate both their own solutions and those of others,

5. Design and build technical solutions and modify based on customer, client, or professional feedback,

6. Lead others in creative thinking and processes, and

7. Present work to a variety of stakeholders and communicate effectively.

Primary Texts

Please see Canvas for the most up-to-date reading list. Digital copies of texts and readings may be available at library.illinois.edu. Potential readings include:

1. *Zig Zag: The Surprising Path to Greater Creativity* by Keith Sawyer (2013)
2. Select readings from *Creativity in Engineering: Novel Solutions to Complex Problems* by David Cropley (2015)
3. Select readings from the *Encyclopedia of Creativity* edited by Mark A. Runco and Steven R. Pritzker (2nd Edition, 2011)

Course Platforms

This course will use Canvas (canvas.illinois.edu) as the primary learning management system for:

1. Posting course materials and documents
2. Submitting assignments (unless otherwise noted)
3. Announcements (verify that you have Compass set up to get these emailed to you)

Attendance Policy

This course primarily uses active learning techniques during class sessions to work towards the course objectives. This includes small group and partner activities as well as whole class and small group discussions. Because of this, it is expected that you will attend class. If you are unable to attend a single class session, please email the instructor prior to your absence. If you need to miss multiple, consecutive class sessions, please email the instructor and plan on signing up for office hours to get caught up with what you have missed as soon as you are able.

Technology Policy

While participating in class sessions, please only use the devices that will help you learn (laptop, smartphone, tablet, etc.). Using a notebook and pen/pencil to jot down notes and ideas during class is highly recommended. Recording material from this course, including class sessions and team meetings is forbidden. Additionally, sharing or posting recorded material online is prohibited and any violation of this policy will be forwarded to the Office of Student Conflict Resolution.

Tentative Schedule and Assignment Due Dates

Week	Topic	Assignment Due	
1	Introduction to creativity: What is it and why does it matter?	**August 23**	**August 25**
2	Cultivating curiosity in professional and academic endeavors	**August 30** Interests & Goals Presentation	**September 1**
3	BioInspiration: Nature as a driver of problem- and solution-based creativity	**September 6** Reading Reflection 1	**September 8**
4	Problem and opportunity discovery	**September 13** You Teach Us 1	**September 15**
5	Introduction to ideation techniques	**September 20**	**September 22** BioInspiration Team Project & Pitch
6	Contextual innovation: Need-finding and place-based design	**September 27** Reading Reflection 2	**September 29**
7	Creativity in diverse teams	**October 4**	**October 6** You Teach Us 2
8	Presenting and pitching creative work	**October 11**	**October 13** Reading Reflection 3
9	Taking initiative: Moving from ideation to implementation	**October 18**	**October 20** V2R Midterm Proposal & Presentation
10	Constraints in implementation of creativity and innovative ideas	**October 25** Reading Reflection 4	**October 27**
11	Ethics in creativity, innovation, and entrepreneurship	**November 1**	**November 3** You Teach Us 3
12	Assessing creativity	**November 8** Reading Reflection 5	**November 10**
13	Creativity and leadership	**November 15**	**November 17**
	Fall Break (no class)		
14	Teaching and advancing creativity	**November 29** Reading Reflection 6	**December 1** V2R Final Presentation
15	Course wrap up	**December 6** Creativity Portfolio	**December 8	Reading Day (no class)**
16		**Final Exam Week (no class)	Due December ?? at 11:59pm** V2R Final Report V2R Final Evaluation	

Grading Overview

The assignments in this course are designed to help you enhance your creativity in a variety of ways. Being a student is rigorous, so each assignment has been developed to benefit your development.
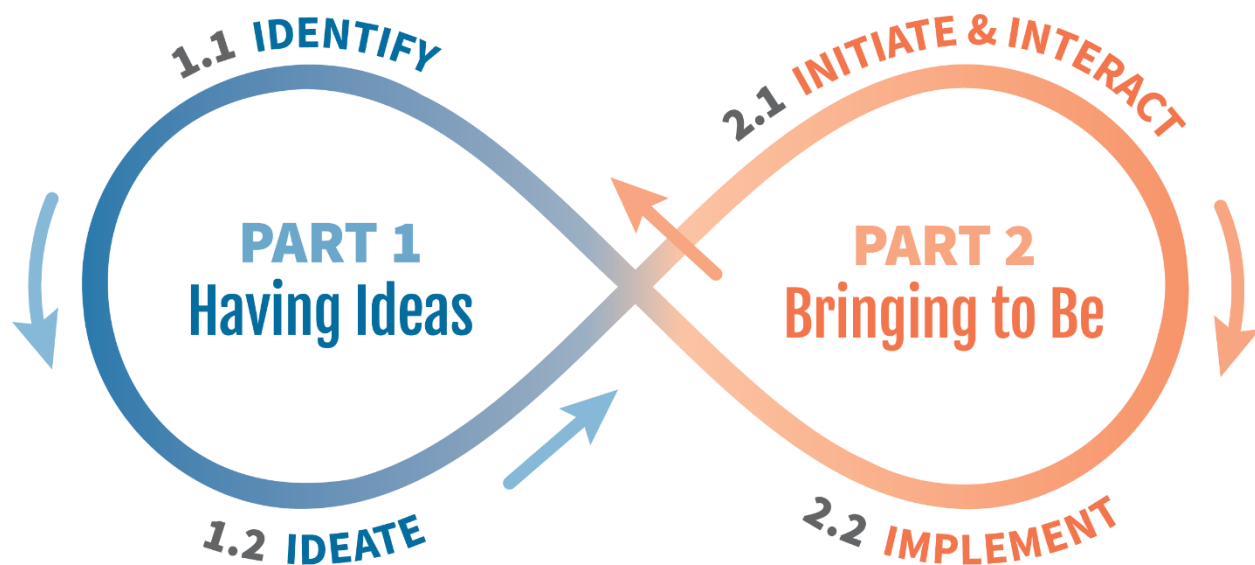
Assignment	Points
Reading Reflections (6 at 25 points each, listed on Canvas)	150
BioInspiration Team Project & Pitch	100
You Teach Us Assignments	
You Teach Us 1	50
You Teach Us 2	50
You Teach Us 3	50
Creativity Portfolio	150
Vision to Reality Semester Project (V2R)	
Midterm Proposal & Presentation	100
Final Presentation	80
Final Report	150
Final Evaluation	30
Preparation & Participation	50
10-Minute Warm Up	20
Interests & Goals Presentation	20
Total	1000

Grading Scale

A+ 98-100%   B+ 87-89%   C+ 77-79%   D+ 67-69%   F   <60%

A   93-96%   B   83-86%   C   73-76%   D   63-66%

A- 90-92%   B- 80-82%   C- 70-72%   D- 60-62%

Late assignments will be reduced 10%/day up to a maximum of 50% off and can be submitted through December ??.

Model of Creativity

1.1 **IDENTIFY**

2.1 **INITIATE & INTERACT**

PART 1
Having Ideas

PART 2
Bringing to Be

1.2 **IDEATE**

2.2 **IMPLEMENT**

PART 1 | Having Ideas

1.1 Identify

Cultivating curiosity

Finding problems and opportunities

Reframing

Understanding

Evaluating

Applying wisdom

Evaluate – *Is it a good opportunity? Does it have value?*

1.2 Ideate

Stockpiling knowledge

Thinking analogically

Connecting

Ideation techniques

Diverging before converging

Tolerating ambiguity

Evaluate – *Is it a good idea? Is it innovative? Does it make a positive impact?*

PART 2 | Bringing to Be

2.1 Initiate & Interact

Taking initiative

Managing risks

Prototyping

Modeling

Analyzing

Evaluate – *Is it a reasonable risk, project, product?*

2.2 Implement

Marshaling resources

Collaborating

Managing time

Stewarding money

Persisting

Evaluate – *Is the problem solved? What needs adjustment?*

Iterate: At any point, loop back as needed.

COVID

Following University policy, all students are required to engage in appropriate behavior to protect the health and safety of the community. Students are also required to follow the campus COVID-19 protocols.

Students who feel ill must not come to class. In addition, students who test positive for COVID 19 or have had an exposure that requires testing and/or quarantine must not attend class. The University will provide information to the instructor, in a manner that complies with privacy laws, about students in these latter categories. These students are judged to have excused absences for the class period and should contact the instructor via email about making up the work.

Students who fail to abide by these rules will first be asked to comply; if they refuse, they will be required to leave the classroom immediately. If a student is asked to leave the classroom, the non- compliant student will be judged to have an unexcused absence and reported to the Office for Student Conflict Resolution for disciplinary action. Accumulation of non-compliance complaints against a student may result in dismissal from the University.

Emergency Response Recommendations

Emergency response recommendations can be found at the following website: http://police.illinois.edu/emergency-preparedness/. I encourage you to review this website and the campus building floor plans website within the first 10 days of class. http://police.illinois.edu/emergency-preparedness/building-emergency-action-plans/.

Sexual Misconduct Reporting Obligation

The University of Illinois is committed to combating sexual misconduct. Faculty and staff members are required to report any instances of sexual misconduct to the University's Title IX Office. In turn, an individual with the Title IX Office will provide information about rights and options, including accommodations, support services, the campus disciplinary process, and law enforcement options.

A list of the designated University employees who, as counselors, confidential advisors, and medical professionals, do not have this reporting responsibility and can maintain confidentiality, can be found here: wecare.illinois.edu/resources/students/#confidential. Other information about resources and reporting is available here: wecare.illinois.edu.

Academic Integrity

You are expected uphold the highest ethical standards, to be honest, and to practice academic integrity. **This includes doing original work and citing sources**, including the work of other students. Please give special care to prepare high-quality submissions with proper grammar and spelling. The University of Illinois at Urbana-Champaign Student Code should also be considered as a part of this syllabus. Students should pay particular attention to Article 1, Part 4: Academic Integrity. Read the Code at the following URL: http://studentcode.illinois.edu/. Academic dishonesty may result in a failing grade. Every student is expected to review and abide by the Academic Integrity Policy: https://studentcode.illinois.edu/article1/part4/1-401/. Ignorance is not an excuse for any academic dishonesty. It is your responsibility to read this policy to avoid any misunderstanding. Do not hesitate to ask the instructor if you are ever in doubt about what constitutes plagiarism, cheating, or any other breach of academic integrity.

Religious Observances

Illinois law requires the University to reasonably accommodate its students' religious beliefs, observances, and practices in regard to admissions, class attendance, and the scheduling of examinations and work requirements. You should examine this syllabus at the beginning of the semester for potential conflicts between course deadlines and any of your religious observances. If a conflict exists, you should notify your instructor of the conflict and follow the procedure at https://odos.illinois.edu/community-of-care/resources/students/religious-observances/ to request appropriate accommodations. This should be done in the first two weeks of classes.

Disability-Related Accommodations

To obtain disability-related academic adjustments and/or auxiliary aids, students with disabilities must contact the course instructor and the Disability Resources and Educational Services (DRES) as soon as possible. To contact DRES, you may visit 1207 S. Oak St., Champaign, call 333-4603, email disability@illinois.edu or go to https://www.disability.illinois.edu. If you are concerned you have a disability-related condition that is impacting your academic progress, there are academic screening appointments available that can help diagnosis a previously undiagnosed disability. You may access these by visiting the DRES website and selecting "Request an Academic Screening" at the bottom of the page.

Family Educational Rights and Privacy Act (FERPA)

Any student who has suppressed their directory information pursuant to Family Educational Rights and Privacy Act (FERPA) should self-identify to the instructor to ensure protection of the privacy of their attendance in this course. See https://registrar.illinois.edu/academic-records/ferpa/ for more information on FERPA.

Anti-Racism and Inclusivity Statement

The Grainger College of Engineering is committed to the creation of an anti-racist, inclusive community that welcomes diversity along a number of dimensions, including, but not limited to, race, ethnicity and national origins, gender and gender identity, sexuality, disability status, class, age, or religious beliefs.

The College recognizes that we are learning together in the midst of the Black Lives Matter movement, that Black, Hispanic, and Indigenous voices and contributions have largely either been excluded from, or not recognized in, science and engineering, and that both overt racism and micro-aggressions threaten the well-being of our students and our university community.

The effectiveness of this course is dependent upon each of us to create a safe and encouraging learning environment that allows for the open exchange of ideas while also ensuring equitable opportunities and respect for all of us. Everyone is expected to help establish and maintain an environment where students, staff, and faculty can contribute without fear of personal ridicule, or intolerant or offensive language. If you witness or experience racism, discrimination, micro-aggressions, or other offensive behavior, you are encouraged to bring this to the attention of the course director if you feel comfortable. You can also report these behaviors to the Bias Assessment and Response Team (BART) (https://bart.illinois.edu/). Based on your report, BART members will follow up and reach out to students to make sure they have the support they need to be healthy and safe. If the reported behavior also violates university policy, staff in the Office for Student Conflict Resolution may respond as well and will take appropriate action.