

TE 510: Advanced Creativity

Technology Entrepreneur Center
GRAINGER ENGINEERING



Fall 2023

- 4 credit hours
- Tuesday/Thursday
- 11am-12:20pm
- 2320 DCL (Digital Computer Laboratory)

Instructor

Dr. Keilin Jahnke
deahl1@illinois.edu

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 reading 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 Notebook

Please purchase a physical notebook to bring to each class session. The style (grid, college-ruled, etc.) is up to you. You will periodically submit this notebook to the instructor for a progress check in.

Course Platform

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)

Technology Policy

While participating in class sessions, please refrain from using devices; using a physical notebook and pen/pencil to jot down notes and ideas during class is actually required! You are welcome to use devices (laptop, tablet, etc.) when appropriate for activities or project work time. 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.

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 complete the form available on Canvas 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 develop a strategy to continue successfully in the course. Extended absences may require a formal letter from the Connie Frank CARE Center. Failure to attend the final presentations without advanced discussion of an excused absence with the instructor will result in a zero presentation grade.

Office Hours and Emails

If you have questions, concerns, ideas you would like to share, are looking for a letter of recommendation, or any other reason to connect with the instructor, please do! **The best way to do so is to either ask before class or sign up for office hours.** If you need to share that you will be absent, please do so by completing the form on Canvas. If you need to email the instructor, please put the course number and semester in the subject line (TE 333 Fall 2024).

. Submissions that cannot be opened will be considered late.

Tentative Schedule and Assignment Due Dates

Week	Topic	Assignment Due	
1	Introduction to creativity: What is it and why does it matter?	August 27	August 29
2	Cultivating curiosity in professional and academic endeavors	September 3 Interests & Goals Presentation	September 5
3	BioInspiration: Nature as a driver of problem- and solution-based creativity	September 10 Reading Reflection 1	September 12
4	Problem and opportunity discovery	September 17 You Teach Us 1	September 19
5	Introduction to ideation techniques	September 24	September 26 BioInspiration Team Project & Pitch
6	Contextual innovation: Need-finding and place-based design	October 1 Reading Reflection 2	October 3
7	Creativity in diverse teams	October 8	October 10 You Teach Us 2
8	Presenting and pitching creative work	October 15 Creativity Portfolio Check 1	October 17 Reading Reflection 3
9	Taking initiative: Moving from ideation to implementation	October 22	October 24 V2R Midterm Proposal & Presentation
10	Constraints in implementation of creativity and innovative ideas	October 29	October 31 Reading Reflection 4
11	Ethics in creativity, innovation, and entrepreneurship	November 5	November 7 You Teach Us 3
12	Assessing creativity	November 12 Reading Reflection 5	November 14
13	Creativity and leadership	November 19	November 21 Reading Reflection 6
Fall Break (no class)			
14	Teaching and advancing creativity	December 3 V2R Final Presentations	December 5 V2R Final Presentation
15	Course wrap up	December 10 V2R Final Report V2R Final Evaluation	December 12 Reading Day (no class)
16	Final Exam Week (no class)		Due December 16 at 11:59pm Creativity Portfolio Check 2

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 purposefully promote your creative development.

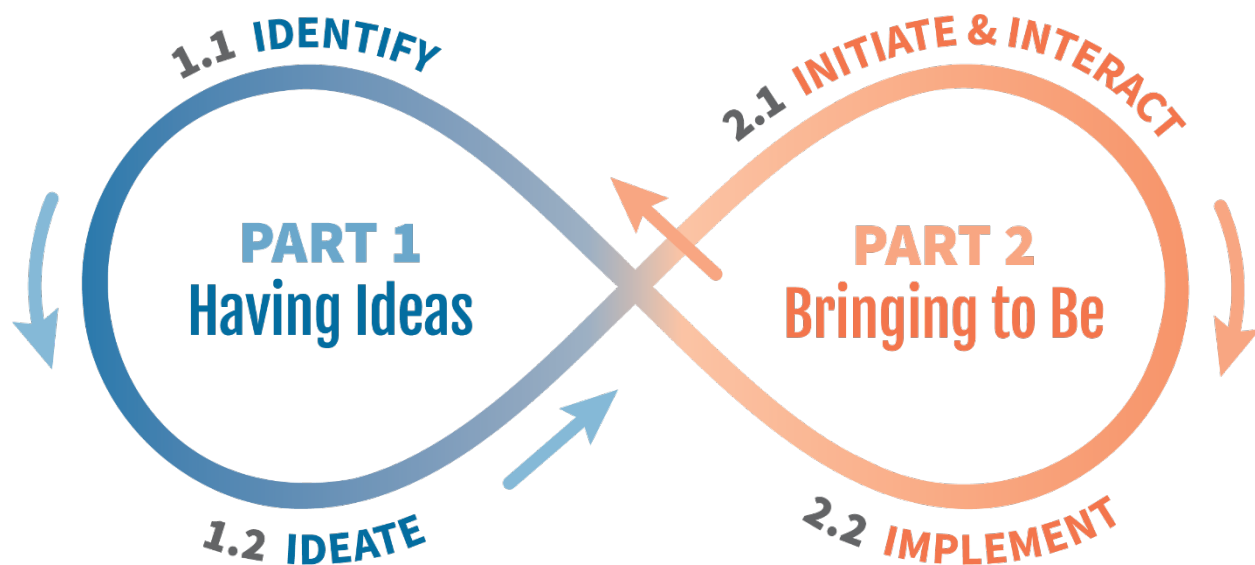
Assignment	Points
Reading Reflections (6 at 25 points each, listed on Canvas)	150
BiInspiration Team Project & Pitch	100
You Teach Us Assignments	
You Teach Us 1	50
You Teach Us 2	50
You Teach Us 3	50
Creativity Portfolio	
Creativity Portfolio Check 1	50
Creativity Portfolio Check 2	100
Vision to Reality 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
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Total	1000

Grading Scale

A+ 980-1000	B+ 870-899	C+ 770-799	D+ 670-699	F <600
A 930-979	B 830-869	C 730-769	D 630-669	
A- 900-929	B- 800-829	C- 700-729	D- 600-629	

Late assignments will be reduced 10% per day up to a maximum of 50% off if submitted by date indicated on the schedule.

Model of Creativity



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.

Assignment Format Policy

All assignments should be submitted to Canvas as a PDF. Other formats will not be accepted, unless otherwise noted. If you need assistance in creating PDFs on your device, please contact the instructor.

Student Diversity

The diversity represented by the participants in this course is deeply valued. Our diversity is a primary source of ideas and perspectives, and you will work in groups and teams in this course to practice the use of that diversity.

Academic Integrity and Artificial Intelligence

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. If an idea is your own, that is original work. If you used assistance to generate an idea or are quoting or stating the idea of another, please properly cite your source (MLA or APA format).

Throughout this class, we will discuss the exciting role and use of text and image generating AI tools (including ChatGPT, Microsoft Copilot, Google Gemini, among all others) in creativity and innovation! However, in order for you to successfully meet the learning objectives of this course, you will be informed as to how and when you can utilize these tools for assignments, projects, and class activities. Any use of these tools outside of these parameters will be considered academic dishonesty.

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.

Resource: Illinois Writers Workshop

The Writers Workshop's mission is to support the University of Illinois community by providing free writing assistance for students, faculty, and staff from all disciplines and at all stages of the writing process. Whether you are working on a course paper, senior capstone, personal statement, group writing project, thesis or dissertation, or manuscript for publication, our consultants are available to help. Visit us at any stage of the writing process: brainstorming, organizing ideas, polishing final drafts, citing sources, and more. The Workshop offers online appointments, in-person appointments, and evening drop-in hours.

The Workshop also sponsors writing groups and provides hands-on presentations about academic writing skills. Find more information at writersworkshop.illinois.edu or learn more about our policies (<https://writersworkshop.illinois.edu/about-the-workshop/policies/>) and our services (<https://writersworkshop.illinois.edu/services/>).

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.

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.

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.

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.

Mental Health

Significant stress, mood changes, excessive worry, substance/alcohol misuse or interferences in eating or sleep can have an impact on academic performance, social development, and emotional wellbeing. The University of Illinois offers a variety of confidential services including individual and group counseling, crisis intervention, psychiatric services, and specialized screenings which are covered through the Student Health Fee. If you or someone you know experiences any of the above mental health concerns, it is strongly encouraged to contact or visit any of the University's resources provided below. Getting help is a smart and courageous thing to do for yourself and for those who care about you.

- Counseling Center (217) 333-3704
- McKinley Health Center (217) 333-2700
- National Suicide Prevention Lifeline (800) 273-8255
- Rosecrance Crisis Line (217) 359-4141 (available 24/7, 365 days a year)

If you are in immediate danger, call 911.

*This statement is approved by the University of Illinois Counseling Center