



# TOI-1

## PRESENTATION

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Topics of Inquiry 1: Creativity: Design,  
Expression, Innovation

# WHAT WE WILL COVER TODAY

## **What constitutes creativity?**

How can students apply higher order thought process to **imagine** new possibilities?

*How can innovative thought and activity be deployed across **different fields** or **disciplines**?*

This presentation will show ways to

- Define creativity
- Apply concepts of creativity to a range of subjects
- Align your course content to the TOI-1 Student Learning Objectives



## ABOUT THE PRESENTER

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Dr. Jorge Paricio Garcia, APIR. has served three years at the University of Connecticut, and brings more than 30 years of academic experience in the field of industrial design. He is the co-director of the Krenicki Arts and Engineering Institute, and has helped establish Multidisciplinary Engineering Degree in Industrial Design and other joint programs, in partnership between the School of Fine Arts and the School of Engineering.

Paricio Garcia, J. (2019). *Hybrid Drawing Techniques for Interior Design*. New York, New York: Routledge.

Paricio, J. (2015). *Perspective Sketching: Beyond the Mannequin*. Digital Drawing

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— Are you ready for the transition?

“Fiction writers, present company included, don’t understand very much about what they do- not why it works when it’s good, not why it doesn’t when it’s bad. I figured the shorter the book, the less the bullshit.

One notable exception to the bullshit rule is *The Elements of Style*, by William Strunk Jr. and E. B. White.”

—Stephen King / On Writing

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# 01

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## DEFINING CREATIVITY

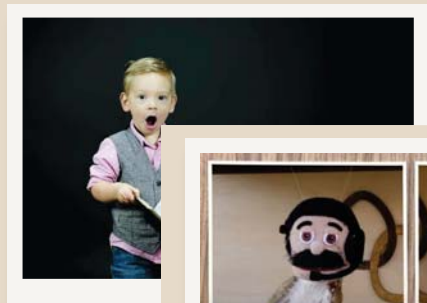
In any discipline, creativity is a process that turns novel ideas into reality. Courses in this topic require higher-order thought processes that imagine new possibilities. Through the application of innovative thought and activity, students will conceive and/or produce new forms of expression, ideas, mechanisms, and products.

# 01 CREATIVITY, with squirrels

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**Eliciting “wow”.** For an idea to be creative, it must elicit a “wow”. But a wow is not the only thing it needs. In order to be creative, ideas must add value, make a difference, enable progress, open the door to possibilities, and do many more things that bring fulfillment to our lives. But there is more. **Your idea also needs to be original.**

*Ideas on Demand. A Crash Course on Creativity, by Miliind Haridas.*



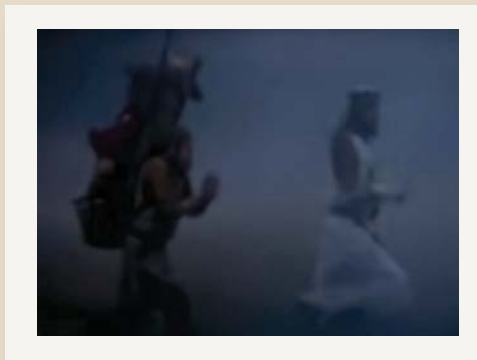
# 01 CREATIVITY, redefined

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## **Could we ask questions differently?**

Instead of asking how do we get horses in a low-budget movie, could we ask how do we get the idea of horses? We could bang two coconut shells together, and just make the sound of the horses. Monty Python and the Holy Grail.

*InGenius. A Crash Course on Creativity*, by Tina Seelig.





# DIFFERENT APPROACHES

**Creativity**, can be treated as an endless renewable resource, where give ourselves permission to explore with **random ingredients**.

**In creative minds**, the **default** mode brain network, the **executive** network, and the **salience** network, are working simultaneously -salience network plays a role in switching from idea generation and idea evaluation.

**The brain seems to work best** when be **stop judgement** and self-monitoring, leaving that part for a later part of the process.

**It appears that neuroplasticity**, or the capacity to make **neural connections** can be trained.

It seems to be plentiful in children.

# DIFFERENT APPROACHES

**Creativity**, can it be constituted by **content** (e.g. entrepreneurship)?

**Creativity**, can it also be constituted by the **delivery of content?** (e.g. how creative can we be to deliver information)?



02

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## APPLYING CONCEPTS

**To a range of subjects and disciplines.**

# ON HISTORY - WHAT IF?

**Imagine finding elements of style from the 1600's. Analyze a novel, like *Don Quixote*.**

Could we imagine writing a review as if we were denying its publication? On what grounds?

What if we imagine writing a letter to Miguel de Cervantes, as if we were a rival, like Lope de Vega?

Could we venture to write in quill, ink and hand made paper?



# ON WRITING – PERFORMANCE SPACES

**A performance space is a setting where you can share your ideas and act them out.**

Could we imagine writing a historical novel using a recreation of a period room?

Could we learn about history if we **pretended to be a journalist** writing events as they happened, stationed abroad?

What if we used a **typewriter**?



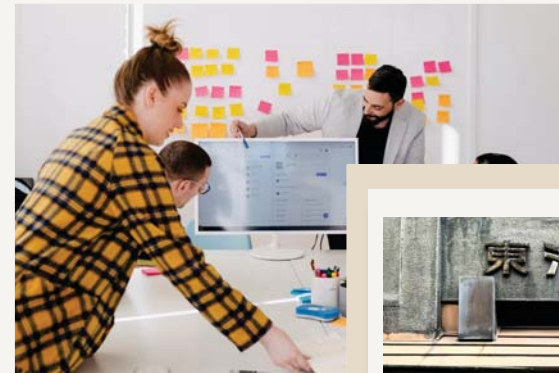
# ON ENGINEERING – CREATIVE SPACES

## **Creative spaces lead to creative work.**

Could we imagine having a space where student clubs, entrepreneurship classes and engineering classes mingle, and **produce prototypes**, during and outside class hours?

The processes of **inventing** and **discovering** are radically different.

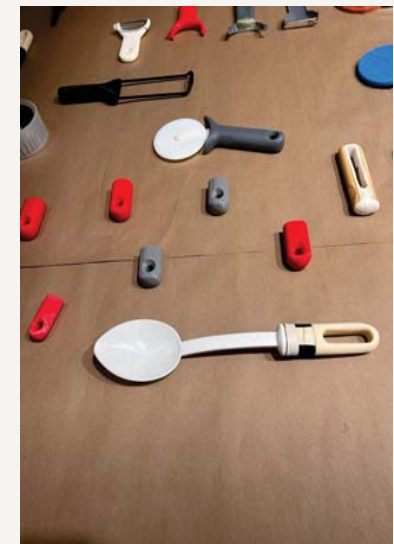
The first one, rooted in science, involves a defined framework with defined tools. The second, involves creative thinking.



# ON BUSINESS- DESIGNING VENTURES

**Business models** can come in many shapes and sizes, and the entrepreneur conceives of configurations to effectively meet market needs, and experiments to fine-tune offerings.

Could we ask the student, as the protagonist, to **design a new venture depending on** the market opportunity, the geography, or the technology?



03

## TOI-1 ALIGNMENT

**Aligning our course content** to the TOI-1 Student  
Learning Objectives



# WHAT WOULD BE THE POINTS TO REMEMBER?

## LEARN

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Knowledge produces the fuel.  
Capture your basics.

## GENERALIZE

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Describe the process,  
Talk to an audience, publish.

## APPLY

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Using the imagination as a  
catalyst. Produce an end result.

## BEING IN THE RIGHT MINDSET

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Having the right attitude that sets  
the spark.



# HOW MANY LEARNING OBJECTIVES?

We can work with at least two of these Learning Objectives, as described [in our common curriculum](#) link.

By the end of the semester, students should be able to:

**Learning Objective 1.** Students will be able to [assess the importance](#) of creativity, ideation, innovation, and/or technical design output to individuals, organizations, society, and/or various fields of study.

**Learning Objective 2.** Students will be able to demonstrate skill with [evaluating](#), [adjusting](#), and [adapting](#) the creative process to address particular challenges, needs, or conditions.

**Learning Objective 3.** Students will be able to [design](#) or create new ideas, mechanisms, methodologies, artistic works, and/or products.

## Product Design and Biomedical Engineering

Identify and write about user experiences from a variety of scenarios, and perceived value in the field of study and its application in industry and society **(found on LO1)**

Write a project scope of a unique product

Identify and use creative thinking processes to inform the creation of preliminary prototypes, iterations and models, and adapt them to address challenges, needs, or conditions **(found on LO2 & LO3)**

Collecting and assimilating information, and producing a report, to subsequently illustrate a theory, or produce a prototype **(found on LO1)**

Utilize the scientific method to collect data and explore valuable information related to a specific constraint

Generalize the skills and learning acquired, to other similar disciplines outside of this course **(found on LO1)**

# 04

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## CONCLUSION

**Creativity is not an exact science**, but it can be nurtured and practiced.

**How do we create classes** that afford students opportunities derived from every challenge?

# ...WHAT THE RIGHT MIX FOR YOUR CLASSROOM?

ASSUMPTIONS	QUESTIONS	FRAME	HOW/WHEN	SHARING	ITERATING
Can we challenge them? Are we comfortable in stupidity? (or ambiguity)	Can we ask different sets of questions?	Can we substitute the frame of reference?	How and when do we capture those Eureka moments?	How do we share our findings?	Is the iterative process linear? At all?
20%	10%	20%	10%	10%	20%