

Spring 2022 - STEM 4043/5023 Creativity and Innovation - T/TH - 9:30-10:45 - Tentative Schedule

*Please keep in mind that this is a tentative schedule. Please check the <http://www.uastem.com> website for updates.

Week 1

Tuesday, January 18

- Introductions and Syllabus Review
 - Making and Tinkering Toolbox
- Video – [The ‘T’ and the ‘E’ in STEM](#)
- Assignment 1 – Using Simple Tools and Materials – Catapult Design (Due – February 3)
- Reading: Introduction and Chapter 1 – STEAM Makers: Fostering Creativity & Innovation in the Elementary Classroom Imperatives – Complete reading review
- Homework: YouTube Video Introduction

Thursday, January 20

- Reading Review
- Creativity (Torrance Creativity Test), Fluency and Flexibility
- Number Sense and Measurement - Catapult Design Challenge
- Reading: Remaking Literacy - Introduction and Chapter 1 – What the Research Says – Complete reading review

Week 2

Tuesday, January 25

- Reading Review
- Making and Tinkering Toolbox (cont.) – Reexamining the Paperclip
- Tool Usage and Material Selection
- Reading: [Safer Tool Usage: Enhancing the Technology and Engineering in Elementary Classrooms](#) and Chapter 3 – The ‘T’ and ‘E’ in STEM in the Overlooked STEM Imperatives – Complete reading review

Thursday, January 27

- Children’s Engineering: Beyond the Basics - Getting Started with Simple Mechanisms
- Assignment – Complete the Geometric Creatures Design Challenge in the Children’s Engineering Book (you may choose your own shapes). (Due – February 1)
- Reading: Remaking Literacy - Chapter 2 – Creative Pathways to Learning – Complete reading review

Week 3

Tuesday, February 1

- Reading Review
- Making and Tinkering Toolbox (cont.)
 - Geometric Creatures as a method for storytelling
- Using <https://vectr.com/> - CorelDRAW & CO2 Laser – The Basics – Designing a Project to be Cut or Engraved on the VersaLASER
- Continue Catapult Design
- Assignment – Set up Remote Lab Virtual Desktop - - to use CorelDRAW to redesign your Geometric Creature
 - Install VMware Horizon Client - <https://its.uark.edu/printing-labs/computer-labs/download-vmhorizon.php>
 - Go to: <https://its.uark.edu/printing-labs/computer-labs/remote-labs-virtual-desktops.php>
 - EDHP-STEM – Click on CorelDRAW
 - Things to remember
 - The first time you use your virtual desktop, it will take several minutes (15-30) to set everything up
 - When CorelDRAW opens, you can click ‘SKIP’, you do not create an account
 - Always log off the remote site to save your content

Wednesday, February 2 – Turnbow Elementary STEAM Night – 5:30-8:30pm

Tuesday, February 3

- Catapult Design Due
- Using the CO2 Laser
 - Continue working to redesign your geometric creature to be cut on the laser
- Reading: Remaking Literacy - Chapter 3 – Thinking and Designing – Complete reading review
- Assignment – This is Not a Box - Paper Engineering Design Challenge Assignment (Due February 17)

Week 4

Tuesday, February 8

- Reading Review
 - Character Cards
- Using the CO2 Laser

Thursday, February 10

- Using the CO2 Laser
- Reading: Remaking Literacy - Chapter 4 – Low Tech Making – Complete reading review
- Assignment – [Create a TinkerCAD account](#) - Working with TinkerCAD

*Children's Engineering Conference – <https://childrensengineering.org/Convention/> - February 8-10-2022

Week 5

Tuesday, February 15

- Reading Review
- Working with TinkerCAD
- Using Cura 3D Printing Slicing Software
- 3D Printing Technology Design Challenge

Thursday, February 17

- This is Not a Box - Paper Engineering Design Challenge Presentations
- LittleBits STEAM Design Challenge – Doodle Wizard
- The Frugal Teacher STEAM Design Challenge
- Reading: Remaking Literacy - Chapter 5 – Remaking with Maker Tech

Week 6

Tuesday, February 22

- Reading Review
- LittleBits STEAM Design Challenge – The Launcher
- The Frugal Teacher STEAM Design Challenge – Development
 - Team selection/assignment
 - Project development
- 3D Printing Technology Design Challenge

Thursday, February 24

- Frugal Teacher STEM Challenge Project Development
- Reading: Remaking Literacy - Chapter 6 – Guidance for Implementation – Complete reading review

Week 7

Thursday, March 1

- Reading Review
- Frugal Teacher STEM Challenge Project Development
- Introduction to Magnetic Levitation Design Challenge – [Moving Along the Tracks Unit](#)
- Reading: Remaking Literacy - Epilogue/Appendices A-B and [Moving Along the Tracks Unit](#) – Complete reading review

Thursday, March 3

***Field trip to the Amazeum (actually called an un-field trip). We will meet at the Amazeum in Bentonville from 9am-12pm.**

Thursday, March 3– Decatur Elementary STEM Night 6:00-7:30

Week 8

Tuesday, March 8

- Fabric/Sewing Design with Dr. Deaton's class

Thursday, March 10

- We will not officially meet for class, as I will be traveling to the International Technology and Engineering Educators Conference (ITEEA) Conference (March 9-12)
- Homework: Read Ch. 1 – Getting Started (pgs. 1-24) in the Learn to Program with Scratch book. You will need to set up a [Scratch account](#) and complete each of the activities. Then customize your game with your own Sprites and Costumes. Be prepared to demonstrate your 'pong' game to the class on Tuesday.

Friday, March 11 – 71st Annual University of Arkansas Regional Science and Engineering Fair – contact Shawn Bell - seb010@uark.edu

Week 9

Tuesday, March 15

- Fabric/Sewing Design with Dr. Deaton's class

Thursday, March 17

- Magnetic Levitation Project Due - MagLev Race
- Introduction to Makey Makey and [Scratch Programming](#)

Week 10

No classes - Spring Break – March 21-25

Week 11

Tuesday, March 29

- MaKey MaKey Design Challenge Project Development

Thursday, March 31

- MaKey MaKey Design Challenge Project Development

Week 12

Tuesday, April 5

- MaKey MaKey Design Challenge Presentations
- Assignment: Engineering a Play Design Challenge
- The influence of theatre experiences in academic and social and emotional learning

Thursday, April 7

- Assignment: Engineering a Play Design Challenge
- Engineering a Play Design Challenge - Storyboard and script development
- Engineering a Play - Puppet Pal Prototype Development

Thursday, April 7 – Center-Gamble Elementary STEM Night (TBD)

Week 13

Tuesday, April 12

- Engineering a Play Design Challenge - Storyboard and script development
- Engineering a Play - Puppet Pal Prototype Development

Thursday, April 14

- Engineering a Play Design Challenge – Puppet Pal Prototype Videos Due

Week 14

Tuesday, April 19

- Maker Tech

Thursday, April 21

- Maker Tech

Week 15

Tuesday, April 26

- Remaking Literacy Final Project Ideation

Thursday, April 28

- Remaking Literacy Final Project Ideation/Presentations

Week 16

Tuesday, May 3

- UA Center for Mathematics and Science (CMASE – STEM Center)

Thursday, May 5

- Robotics, Drones, and Programming Design Challenges

Friday, May 6 – Dead Day

Final Exam

Tuesday, May 10, 2021 – 8:00 – 10:00 – Remaking Literacy Project Presentation