Fall 2018 – STEM 4033 - 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, August 21

- Introduction via Earth Ball – Land vs. Water Activity
  - https://www.jpl.nasa.gov/edu/teach/activity/ocean-world-earth-globe-toss-game/
- Syllabus Review
- Intro to STEM Education PP
- Readings: Handout - Ch. 1 - Introduction and Background and History of the STEM Movement in *The Overlooked STEM Imperatives*

Thursday, August 23

- Reading Review
- Intro to STEM Education PP (cont.)
- Touchdown Design Challenge
- Readings: Chapter 1. Why Project Based Learning? (pgs. 1-23) in the PBL text

Week 2

Tuesday, August 28

- Reading Review
- Space Frame Challenge (using simple tools and materials)
- Reading: Handout - Chapter 2 – Power and Promise of STEM Education in the *The Overlooked STEM Imperatives and* A Framework for STEM Problem Solving

Thursday, August 30

- Reading Review
- Space Frame Challenge Testing and Discussion
- The Design Loop PP
- Assignment 1 – Creating a Design Loop (Due September 6)
- Reading: Appendix A. Project Snapshots (pgs. 177-121) in the PBL text

Week 3

Tuesday, September 4

- Reading Review
- The Design Process – Sample Design Challenge
- Reading: Chapter 3 – 'T' and 'E' in STEM in the *The Overlooked STEM Imperatives*

Thursday, September 6

- Design Loop Presentations
- Reading Review
- Curriculum Design and Assessment PP
- Assignment 2 - Literature-based Curriculum Assignment (Due September 20)
- Reading: Writing a STEM Design Brief and Toward Narrative-Centered Learning Environments

Week 4

Tuesday, September 11

- Reading Review
- Curriculum Design and Assessment PP (continued)
- Literature-based Curriculum Development
- Reading: Handout - Integrating Literacy and Engineering Instruction for Young Learners

Thursday, September 13

- Reading Review
- Curriculum Design and Assessment (continued)
- Reading: Performance-Based Assessment Guide

Week 5

Tuesday, September 18

- Reading Review
- Curriculum Design and Assessment (continued)
- Rubric Planning Sheet, Engineering Journal Booklets, Design Logs
- Reading: Performance-Based Assessment Guide

Thursday, September 20

- Literature-based Curriculum Assignment Due – Presentations
- Technical Procedural Problem Solving PP
- Assignment 3 - Technical Procedural Curriculum (Due October 4)

Week 6

Tuesday, September 25

- Technical Procedural Problem Solving PP
- Reading: Handout - Writing a Technical Procedural STEM Problem

Thursday, September 27

- Technical Procedural Design Challenge using Teacher Geek Materials

Week 7

Tuesday, October 2

- Technical Procedural Design Challenge (continued)

Thursday, October 4

- Technical Procedural Curriculum Assignment Due – Presentations
- Using Blocks and Construction Toys for Teaching STEM PP
- Assignment 4 - Construction Blocks Curriculum Project (Due October 23)
- Readings: Using Block Play and Blocks as a Tool for Learning

Week 8

Tuesday, October 9 – No Class - ISEA (October 7-9)

-Alternative assignment for students not attending the ISEA Conference -

Thursday, October 11

- Reading Review
- Keva Maze Design Challenge
- KEVA Resources

Week 9

Tuesday, October 16 – No Class – Fall Break (October 15-16)

Thursday, October 18

- Construction Block Curriculum Team Development

Week 10

Tuesday, October 23

- Construction Block Curriculum Assignment Due – Presentations
- Lego WeDo Robotics – Bring laptops to class

Thursday, October 25

- Lego WeDo Robotics – Bring laptops to class

Week 11

Tuesday, October 30

- The Quick Challenge PP
- Quick Challenge Sample
- Quick Challenge Checklist
- Assignment 5 - Quick Challenge Project (Due November 6)

Thursday, November 1

- Quick Challenge peer review
- Introduction to Electricity
- Reading: Chapter 1: http://www.allaboutcircuits.com/vol_1/index.html
- Building electrical circuits
- Assignment 6 - Electricity Curriculum Project

Week 12

Tuesday, November 6

- Building electrical circuits– Lab day

Thursday, November 8

- Building electrical circuits– Lab day

Week 13

Tuesday, November 13

- Building electrical circuits– Lab day

Thursday, November 15 - No Class – Mississippi Valley Conference (November 15-16)

Week 14

Tuesday, November 20

- Electricity Curriculum Assignment Due – Presentations
- Introduction to Paper Engineering
- Assignment 7 – Paper Engineering/Pop-Up Card Project (Due November 29)

Thursday, November 22 – No Class – Thanksgiving (November 21-23)

Week 15

Tuesday, November 27

- Paper Engineering

Thursday, November 29

- Pop-Up Card Assignment Due – Presentations
- Scientific Inquiry and Engineering Design – Using scientific evidence to inform design
- Final Project

Week 16

Tuesday, December 4

- Scientific Inquiry and Engineering Design – Using scientific evidence to inform design

Thursday, December 6

- Scientific Inquiry and Engineering Design – Using scientific evidence to inform design

***December 7 – Dead Day - Razorback STEM Challenge – Alternate Final Project**

Final Exams

Daugherty - 11:00-12:15 - Tuesday, December 11 – 10:15-12:15
Carter - 3:30-4:45 - Tuesday, December 11 – 3:00-5:00
Carter - 5:00-6:15 - Thursday, December 13 –5:00-7:00