Spring 2018 – STEM 4033 T/TH 12:30-1:45 - 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 16

- 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, January 18

- 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, January 23

- 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, January 25

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

Week 3

Tuesday, January 30

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

Thursday, February 1

- Design Loop Presentations
- Reading Review
- Curriculum Design and Assessment PP
- Assignment 2 - Narrative Curriculum Assignment (Due February 15)
- Reading: Writing a STEM Design Brief and Toward Narrative-Centered Learning Environments

Week 4

Tuesday, February 6

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

Thursday, February 8

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

Week 5

Tuesday, February 13

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

Thursday, February 15

- Narrative Curricula Presentations
- Technical Procedural Problem Solving PP
- Assignment 3 - Technical Procedural Curriculum (Due March 1)

Week 6

Tuesday, February 20

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

Thursday, February 22

- Technical Procedural Design Challenge using Teacher Geek Materials

Week 7

Tuesday, February 27

- Technical Procedural Design Challenge (continued)

Thursday, March 1

- Technical Procedural Curriculum Assignment Due – Presentations
- Using Blocks and Construction Toys for Teaching STEM PP
- Assignment 4 - Construction Blocks Curriculum Project (Due Thursday, March 15)
- Readings: Using Block Play and Blocks as a Tool for Learning

Week 8

Tuesday, March 6

- Reading Review
- Keva Maze Design Challenge
- KEVA Resources

Thursday, March 8

- Construction Block Curriculum Team Development

Week 9

Tuesday, March 13

- Construction Block Curriculum Team Development

Thursday, March 15

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

Week 10

No Class - Spring Break – March 19-23

Week 11

Tuesday, March 27

- Lego WeDo Robotics – Bring laptops to class

Thursday, March 29

- The Quick Challenge PP
- Quick Challenge Sample
- Quick Challenge Checklist
- Assignment 5 - Quick Challenge Project (Due Thursday, April 5)

Week 12

Tuesday, April 3

- 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

Thursday, April 5

- Building electrical circuits– Lab day

Week 13

Tuesday, April 10

- Building electrical circuits– Lab day

Thursday, April 12 - No Class – International Technology and Engineering Educators Conference, Atlanta, GA

Week 14

Tuesday, April 17

- Building electrical circuits– Lab day

Thursday, April 19

- Electricity Curriculum Assignment Due – Presentations
- Introduction to Paper Engineering
- Assignment 7 – Paper Engineering/Pop-Up Card Project (Due Thursday, April 26)

Week 15

Tuesday, April 24

- Paper Engineering

- Pop-Up Card Assignment

Thursday, April 26

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

Week 16

Tuesday, May 1

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

Thursday, May 3

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

Final Exams

T/TH - 12:30-1:45 - Thursday, May 10, 2018 – 12:45 – 2:45 – Final Project Due - Presentations