Spring 2019 – 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, January 15

- 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 17

- 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 22

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

Thursday, January 24

- Reading Review
- Space Frame Challenge Testing and Discussion
- The Design Loop PP
- Assignment 1 – Creating a Design Loop (Due January 31)
- Reading: Appendix A. Project Snapshots (pgs. 177-121) in the PBL text

Week 3

Tuesday, January 29

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

Thursday, January 31

- Design Loop Presentations
- Reading Review
- Curriculum Design and Assessment PP
- Assignment 2 - Literature-based Curriculum Assignment (Due February 14)
- Reading: Writing a STEM Design Brief and Toward Narrative-Centered Learning Environments

Week 4

Tuesday, February 5

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

Thursday, February 7

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

Week 5

Tuesday, February 12

- Peer review - Literature-based Curriculum Project
- Curriculum Design and Assessment (continued)
- Rubric Planning Sheet, Engineering Journal Booklets, Design Logs
- Reading: Performance-Based Assessment Guide

Thursday, February 14

- Literature-based Curriculum Assignment Due – Presentations
- Technical Procedural Problem Solving PP
- Assignment 3 - Technical Procedural Curriculum (Due February 28)

Week 6

Tuesday, February 19

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

Thursday, February 21

- Technical Procedural Design Challenge using Teacher Geek Materials

Week 7

Tuesday, February 26

- Technical Procedural Design Challenge (continued)

Thursday, February 28

- Technical Procedural Curriculum Assignment Due – Presentations
- Using Blocks and Construction Toys for Teaching STEM PP
- Assignment 4 - Construction Blocks Curriculum Project (Due March 14)
- Readings: Using Block Play and Blocks as a Tool for Learning

Week 8

Tuesday, March 5

- Reading Review
- Keva Maze Design Challenge
- KEVA Resources

Thursday, March 7

- Construction Block Curriculum Team Development

Week 9

Tuesday, March 12

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

Thursday, March 14

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

Week 10

No Class - Spring Break – March 18-22

Week 11 –

Tuesday, March 26

- The Quick Challenge PP
- Quick Challenge Sample
- Quick Challenge Checklist
- Assignment 5 - Quick Challenge Project (Due April 2)

Thursday, March 29

- (ITEEA Conference, Kansas City)

Week 12

Tuesday, April 2

- 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 4

- Building electrical circuits– Lab day

Week 13

Tuesday, April 9

- Building electrical circuits– Lab day

Thursday, April 11

- Building electrical circuits– Lab day

Week 14

Tuesday, April 16

- Building electrical circuits– Lab day

Thursday, April 18

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

Week 15

Tuesday, April 23

- Paper Engineering

Thursday, April 25

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

Week 16

Tuesday, April 30

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

Thursday, May 2

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

Friday, May 3 - Dead Day

Final Exams

STEM 4033

- **T/TH – 12:30-1:45 - Thursday, May 10, 2018 – 12:45 – 2:45**