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

Monday, January 14

- 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*

Wednesday, January 16

- 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

Monday, January 21 No Class- MLK Holiday

Wednesday, January 23

- 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

Week 3

Monday, January 28

- Reading Review
- Space Frame Challenge Testing and Discussion
- The Design Loop PP
- Assignment 1 – Creating a Design Loop (Due January 30)
- Reading: Appendix A. Project Snapshots (pgs. 177-121) in the PBL text

Wednesday, January 30

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

Week 4

Monday, February 4

- Design Loop Presentations
- Reading Review
- Curriculum Design and Assessment PP
- Assignment 2 - Literature-based Curriculum Assignment (Due February 13)
- Reading: Writing a STEM Design Brief and Toward Narrative-Centered Learning Environments

Wednesday, February 6

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

Week 5

Monday, February 11

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

Wednesday, February 13

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

- Reading: Performance-Based Assessment Guide

Week 6
Monday, February 18
- Literature-based Curriculum Assignment Due – Presentations
- Technical Procedural Problem Solving PP
- Assignment 3 - Technical Procedural Curriculum (Due February 27)

Wednesday, February 20
- Technical Procedural Problem Solving PP
- Reading: Handout - Writing a Technical Procedural STEM Problem

Week 7
Monday, February 25
- Technical Procedural Design Challenge using Teacher Geek Materials

Wednesday, February 27
- Technical Procedural Design Challenge (continued)

Week 8
Monday, March 4
- Technical Procedural Curriculum Assignment Due – Presentations
- Using Blocks and Construction Toys for Teaching STEM PP
- Assignment 4 - Construction Blocks Curriculum Project (Due March 13)
- Readings: Using Block Play and Blocks as a Tool for Learning

Wednesday, March 6
- Reading Review
- Keva Maze Design Challenge
- KEVA Resources

Week 9
Monday, March 11
- Construction Block Curriculum Team Development

Wednesday, March 13
- Construction Block Curriculum Assignment Due – Presentations
- Lego WeDo Robotics – Bring laptops to class

Week 10
No Class - Spring Break – March 18-22

Week 11 –
Monday, March 25
- Construction Block Curriculum Assignment Due – Presentations
- Lego WeDo Robotics – Bring laptops to class

Wednesday, March 27
- (ITEEA Conference, Kansas City)

Week 12
Monday, April 3
- The Quick Challenge PP
- Quick Challenge Sample
- Quick Challenge Checklist
- Assignment 5 - Quick Challenge Project (Due April 3)

Wednesday, April 3
- Peer Review and Submission of Quick Challenge
- Introduction to Electricity
- Reading: Chapter 1: http://www.allaboutcircuits.com/vol_1/index.html
- Building electrical circuits
- Assignment 6 - Electricity Curriculum Project (due April 17)

Week 13

Monday, April 8

- Building electrical circuits– Lab day

Wednesday, April 8

- Building electrical circuits– Lab day

Week 14

Monday, April 15

- Building electrical circuits– Lab day

Wednesday, April 17

- Building electrical circuits– Lab day

Week 15

Monday, April 22

- Electricity Curriculum Assignment Due – Presentations
- Introduction to Paper Engineering
- Assignment 7 – Paper Engineering/Pop-Up Card Project (Due April 24)

Wednesday, April 24

- Paper Engineering

Week 16

Monday, April 29

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

Wednesday, May 1

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

Friday, May 3 - Dead Day

Final Exams for M/W Classes:

STEM 4033 ***(Refer to your course instructor for corresponding final examination date/time)***

- Dr. Mike Daugherty Monday, May 6, 2019- 12:45-2:45
- Dr. Angela Elsass Monday, May 6, 2019- 3:00-5:00
- Ms. Robyn Lane Wednesday, May 8, 2019- 3:00-5:00