Fall 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, August 27

- 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 29

- Reading Review
- Intro to STEM Education PP (cont.)
- Design Challenge
- Reading: A conceptual framework for integrated STEM education

Week 2

Tuesday, September 3

- Reading Review
- Space Frame Challenge (using simple tools and materials)
- Readings: Chapter 1. Why Project Based Learning? (pgs. 1-23) in the PBL text

Thursday, September 5

- Reading Review
- Space Frame Challenge Testing and Discussion
- The Design Loop PP
- Assignment 1 – Creating a Design Loop (Due September 12)
- Reading: Chapter 2 – Power and Promise of STEM Education in the *The Overlooked STEM Imperatives and* A Framework for STEM Problem Solving

Week 3

Tuesday, September 10

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

Thursday, September 12

- Design Loop Presentations
- Reading Review
- Curriculum Design and Assessment PP
- Assignment 2 - Literature-based Curriculum Assignment (Due September 26)
- Reading: Writing a STEM Design Brief and Toward Narrative-Centered Learning Environments

Week 4

Tuesday, September 17

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

Thursday, September 19

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

Week 5

Tuesday, September 24

- 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, September 26

- Literature-based Curriculum Assignment Due – Presentations
- Technical Procedural Problem Solving PP
- Assignment 3 - Technical Procedural Curriculum (Due October 10)

Week 6

Tuesday, October 1

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

Thursday, October 3

- Technical Procedural Design Challenge using Teacher Geek Materials

Week 7

Tuesday, October 8

- Technical Procedural Design Challenge (continued)

Thursday, October 10

- Technical Procedural Curriculum Assignment Due – Presentations
- Using Blocks and Construction Toys for Teaching STEM PP
- Assignment 4 - Construction Blocks Curriculum Project (Due October 31)
- Readings: Using Block Play and Blocks as a Tool for Learning

Week 8

Tuesday, October 15

- Reading Review
- Keva Maze Design Challenge
- KEVA Resources

Thursday, October 17

- Construction Block Curriculum Team Development

Week 9

Tuesday, October 22 - No Class – Fall Break

Thursday, October 24

- Computer Programming - Robotics – Bring laptops to class

Week 10

Tuesday, October 29

- Computer Programming - Robotics – Bring laptops to class

Thursday, October 31

- Construction Block Curriculum Assignment Due – Presentations
- Computer Programming - Robotics – Bring laptops to class

Week 11 –

Tuesday, November 5

- The Quick Challenge PP
- Quick Challenge Sample
- Quick Challenge Checklist
- Assignment 5 - Quick Challenge Project (Due November 12)

Thursday, November 7

- 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 12

- Quick Challenge Due

- Introduction to Electricity
- Reading: Chapter 1: http://www.allaboutcircuits.com/vol_1/index.html
- Building electrical circuits
- Assignment 6 - Electricity Curriculum Project (Due December 3)

Thursday, November 14 – No Class – Mississippi Valley Technology Teacher Educator Conference - Nashville

- Building electrical circuits– Lab day

Week 13

Tuesday, November 19

- Building electrical circuits– Lab day

Thursday, November 21

- Building electrical circuits– Lab day

Week 14

Tuesday, November 26

- Building electrical circuits– Lab day

Thursday, November 28 – No Class – Thanksgiving Break

Week 15

Tuesday, December 3

- Electricity Curriculum Project Presentations
- Introduction to Paper Engineering
- Assignment 7 – Paper Engineering/Pop-Up Card Project (Due December 10)
- Paper Engineering

Thursday, December 5

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

Week 16

Tuesday, December 10

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

Thursday, December 12

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

Final Exams

STEM 4033

- **T/TH – 9:30 – 10:45 - Thursday, December 19 – 8:00am – 10:00am**
- **T/TH – 12:30 – 1:45 - Thursday, December 19 – 12:45pm – 2:45pm**
- **T/TH – 3:30 – 4:45 – Tuesday, December 17 – 3:00pm – 5:00pm**