**Fall 2025 - STEM 40303 Introduction to STEM Education Tentative Schedule**

*Please keep in mind that this is a tentative schedule. All course content can be found on my website: https://www.uastem.com/
All assignments will be submitted through the course Blackboard page. Please check the http://www.uastem.com website for updates.

**Week 1**
**Tuesday, August 19 and Thursday, August 21**
**Wednesday, August 20 and Friday, August 22**

- Syllabus and Schedule Review
- Introduction to STEM Education
- Challenge (in-class) – Climer Cards/Earth Ball Introductions
- Challenge (at-home) – Video Introduction Assignment
- Weekly Reading Assignment – Introduction and Background and History of the STEM Movement in The Overlooked STEM Imperatives and Reading Reflection
- Reading Review
- Challenge (in-class) – Engineering Design Challenge – Teacher Trophy Challenge
- Weekly Reading Assignment – The Nature of Interdisciplinary STEM Education chapter and Reading Reflection

**Week 2**
**Tuesday, August 26 and Thursday, August 28**
**Wednesday, August 27 and Friday, August 29**

- Reading Review – The STEL
- Measuring: Materials, Tools, and Processes
- Challenge (in-class) – Space Frame Building Challenge
- Weekly Reading Assignment – Enhancing the Technology and Engineering in Elementary Classrooms: Safer Tool Usage and Reading Reflection

**Week 3**
**Tuesday, September 2 and Thursday, September 4**
**Wednesday, September 3 and Friday, September 5**

- The Engineering Design Process
- Weekly Reading Assignment – Connecting Compassion Empathy's Role in STEM and Literacy Integration and Reading Reflection
- Major Assignment – Major Assignment – The Engineering Design Loop
- Weekly Reading Assignment – A Framework for STEM Problem-Solving and Reading Reflection
- Challenge (in-class) – Engineering Design Challenge - A Bridge to Nowhere

**Week 4**
**Tuesday, September 9 and Thursday, September 11**
**Wednesday, September 10 and Friday, September 12**

- Design Loop Presentations
- The Quick Challenge
- Character Cards (Story Grammar) (in-class) Challenge
- Weekly Reading Assignment – Standards for Technological and Engineering Literacy and STEM Education and Reading Reflection
- Quick Challenges (in-class)

**Week 5**
**Tuesday, September 16 and Thursday, September 18**
**Wednesday, September 17 and Friday, September 19**

- The Literature-based STEM Curriculum - Writing a STEM Design Brief
- Major Assignment – Literature-Based Curriculum, Rubric, and Check-List
- Reading Assignment – Developing Big Ideas and Essential Questions
- Weekly Reading Assignment – Integrating Literacy and Engineering Instruction for Young Learners and Reading Reflection
- Literature-based Design Challenge Development
- Exploring Potential Tools and Materials
- STEL standards and benchmarks

**Week 6**
**Tuesday, September 23 and Thursday, September 25**
**Wednesday, September 24 and Friday, September 26**

- Literature-based Curriculum Development and Ideation

- Performance-Based-Assessment-Guide
- Literature-based Curriculum Peer Review and Presentation

**Week 7**
**Tuesday, September 30 and Thursday, October 2**
**Wednesday, October 1 and Friday, October 3**

- Using Blocks and Construction Toys for Teaching STEM PP
- Keva Design Challenges (in class)
- KEVA Educator Guide Lesson Plans
- Weekly Reading Assignment – Using Block Play and Blocks As a Tool for Learning and Reading Reflection
- Reading Review
- Team Fort Enclosure Design Challenge (in-class)
- Major Assignment – Construction Block Design Brief Assignment
- Discuss working in teams on major projects
- Construction Block Ideation Guide

**Week 8**
**Tuesday, October 7 and Thursday, October 9**
**Wednesday, October 8 and Friday, October 10**

- Construction Block Project Development
- Computational Thinking
- Code & Go Robot Mice Challenges (in-class)
- Challenge (in-class) – HexBug Challenge - Part 1

**Week 9 - Fall Break – October 13-14**
**Thursday, October 16**
**Wednesday, October 15 and Friday, October 17**

- Challenge (in-class) – HexBug Challenge – Part 2
- Technical Procedural Problem-Solving

**Week 10**
**Tuesday, October 21 and Thursday, October 23**
**Wednesday, October 22 and Friday, October 24**

- Weekly Reading Assignment – Writing a Technical/Procedural STEM Problem and Reading Reflection
- Technical-Procedural Problem-Solving PP
- Challenge (in-class) – Lego back-to-back Challenge
- Challenge (in-class) – Teacher Geek

**Week 11**
**Tuesday, October 28 and Thursday, October 30**
**Wednesday, October 29 and Friday, October 31**

- Introduction to Electricity – Building electrical circuits to demonstrate transfer of energy.
- Challenge (in-class) – Paper Circuits – Drawing a Circuit Quick Challenge
- Challenge (in-class) – The Simplest Electric Motor
- Major Assignment – Electricity-Curriculum-Project
- Challenge (in-class) – Simple Circuit with Switch
- The Electricity Project PP
- Suggested Reading: Chapter 1: http://www.allaboutcircuits.com/vol_1/index.html

**Week 12**
**Tuesday, November 4 and Thursday, November 6**
**Wednesday, November 5 and Friday, November 7**

- The Electricity Project Ideation
    - 4th Grade Standards and Content
    - Big Ideas and Essential Questions
    - Scenario and Challenge
- Electricity Curriculum Project Development

**Week 13**
**Tuesday, November 11 and Thursday, November 13**
**Wednesday, November 12 and Friday, November 14**

- Electricity Curriculum Project Development

**Week 14**
**Tuesday, November 18 and Thursday, November 20 (NO CLASS on Thursday - 1909 Conference – November 19 – 21)**
**Wednesday, November 19 and Friday, November 21 (NO CLASS on Friday - 1909 Conference – November 19 – 21)**

- Electricity Curriculum Project Presentations

**Week 15**
**Tuesday, November 25 and Thursday, November 27 (NO CLASS on Thursday - Thanksgiving Break – November 26-28)**
**Wednesday, November 19 and Friday, November 21 (NO CLASS on Wednesday and Friday - Thanksgiving Break – November 26-28)**

- Paper Engineering
- Challenge – Pop-Up Card Quick Challenge

**Week 16**
**Tuesday, December 2 and Thursday, December 4**
**Wednesday, December 3**

- Cooperative and Collaborative Learning
- Paper Engineering Project (cont.)
- Challenge (in-class) - MakeDo

**December 5 – Reading Day**

**Final Exams**

**T/TH – 12:30 – 1:45 – Thursday, December 11 – 12:45-2:45**

**T/TH – 3:30-4:45 – Thursday, December 11 – 3:00–5:00**

**W/F – 11:50 – 1:05 – Monday, December 8 – 12:45-2:45**