

Fall 2026 - STEM 40303 Introduction to STEM Education Tentative Schedule - Updated

*Please keep in mind that this is a tentative schedule. All course content can be found on: <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

Monday, August 17 and Wednesday, August 19

Tuesday, August 18 and Thursday, August 20

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

Week 2

Monday, August 24 and Wednesday, August 26

Tuesday, August 25 and Thursday, August 27

- Reading Review
- Challenge (in-class) – Engineering Design Challenge – A Bridge to Nowhere
- Weekly Reading Assignment – Connecting Compassion Empathy's Role in STEM and Literacy Integration and Reading Reflection
- Challenge (in-class) – The Water Princess Engineering Design Challenge
- Weekly Reading Assignment – Enhancing the Technology and Engineering in Elementary Classrooms: Safer Tool Usage and Reading Reflection

Week 3

Monday, August 31 and Wednesday, September 2

Tuesday, September 1 and Thursday, September 3

- Reading Review - Enhancing the Technology and Engineering in Elementary Classrooms: Safer Tool Usage
- Tool School - Measuring, Materials, Tools, and Processes
- The Why – Madeline's Treehouse Engineering Design Challenge
- Challenge (in-class) – Space Frame Building Challenge

Week 4 – Labor Day – September 7

Wednesday, September 9

Tuesday, September 8 and Thursday, September 10

- Challenge (in-class) – Madeline's Treehouse Engineering Design Challenge
- Weekly Reading Assignment – A Framework for STEM Problem-Solving - Major Assignment – The Engineering Design Loop/Process and Reading Reflection

Week 5

Monday, September 14 and Wednesday, September 16

Tuesday, September 15 and Thursday, September 17

- The Engineering Design Process – The great integrator
- Major Assignment – The Engineering Design Loop/Process
 - PowerPoint Template
- The Happy Hat Engineering Design Challenge (in-class)
- Weekly Reading Assignment – The Standards for Technological and Engineering Literacy and STEM and Reading Reflection

Week 6

Monday, September 21 and Wednesday, September 23

Tuesday, September 22 and Thursday, September 24

- Design Loop/Process Presentations
- Conversation about design fixation
- The Literature-based STEM Curriculum - Writing a STEM Design Brief
- Major Assignment – Literature-Based Curriculum, Rubric, and Check-List
- AR State Standards -STEL standards and benchmarks
- Weekly Reading: Developing Big Ideas and Essential Questions and Reading Reflection
- Literature-based Design Challenge Development
 - Rough Draft (Part 1)

- Weekly Reading: Weekly Reading Assignment – Integrating Literacy and Engineering Instruction for Young Learners and Reading Reflection

Week 7

Monday, September 28 and Wednesday, September 30

Tuesday, September 29 and Thursday, October 1

- Literature-based Curriculum Development and Ideation
 - Rough Draft (Part 2)
- Exploring Potential Tools and Materials
- Working as a team to fully develop the project of your choice

Week 8

Monday, October 5 and Wednesday, October 7

Tuesday, October 6 and Thursday, October 8

- Literature-based Curriculum Development
- Literature-based Curriculum Peer Review and Presentation

Week 9

Monday, October 12 and Wednesday, October 14

Tuesday, October 13 and Thursday, October 15

- Using Blocks and Construction Toys for Teaching STEM PP
- Keva Design Challenges (in class)
- Character Cards (Story Grammar)
 - Character Card Quick Challenges and Blocks (in-class)

Week 10 - Fall Break – October 19-20

Wednesday, October 21

Thursday, October 22

- Computational Thinking
 - K-4 Computer Science Standards - https://drive.google.com/file/d/1wULJcNmGfs_H9IB1WATTGgzcMM5s7Llg/view?pli=1
 - 5-8 Computer Science Standards - <https://drive.google.com/file/d/10OkANxehCzQi6t5B58gnmaX-bhImzEid/view>
- Code & Go Robot Mice Challenges (in-class)
- HexBug Challenge (in-class)

Week 11

Monday, October 26 and Wednesday, October 28

Tuesday, October 27 and Thursday, October 29

- Technical-Procedural Problem-Solving
- Weekly Reading Assignment – Writing a Technical/Procedural STEM Problem and Reading Reflection
- Challenge (in-class) – Lego back-to-back Challenge
- Introduction to Electricity – Building electrical circuits to demonstrate transfer of energy.
- Challenge (in-class) – Paper Circuits – Drawing a Circuit Quick Challenge & The Simplest Electric Motor
- Suggested Reading: Chapter 1: http://www.allaboutcircuits.com/vol_1/index.html

Week 12

Monday, November 2 and Wednesday, November 4

Tuesday, November 3 and Thursday, November 5

- Challenge (in-class) – Simple Circuit with Switch
- Major Assignment – Electricity-Curriculum-Project
- The Electricity Project PP
- The Electricity Project Ideation
 - 4th Grade Standards and Content
 - Big Ideas and Essential Questions
 - Scenario and Challenge

Week 13 - 1909 Conference – November 11-13

Monday, November 9

Tuesday, November 10

- Electricity Project Development

Wednesday, November 11 and Thursday, November 12 – We will not officially meet for class - Electricity Project Development (cont.)

Week 14

Monday, November 16 and Wednesday, November 18

Tuesday, November 17 and Thursday, November 9

- Electricity Project Development
- Electricity Project Presentations
- Introduction to Paper Engineering
- Pop-Up (in-class) Challenges

Week 15 - NO CLASS on Thursday - Thanksgiving Break – November 25-27)

Monday, November 23

Tuesday, November 24

- Paper Engineering (in-class) Challenges
- Major Assignment – Paper Engineering Project
- Paper Engineering Project Development

Week 16

Monday, November 30 and Wednesday, December 2

Tuesday, December 1 and Thursday, December 3

- Cardboard Engineering
- Challenge (in-class) – MakeDo
- Paper Engineering Project Presentation
- Automata – Preparation for the Final Exam

December 4 – Reading Day

Final Exams

M/W – 2:00 – 3:15 – Monday, December 7 – 3:00-5:00

M/W – 3:30-4:45 – Wednesday, December 9 – 3:00-5:00

T/TH – 12:30 – 1:45 – Tuesday, December 8 – 12:45 – 2:45

T/TH – 3:30-4:45 – Tuesday, December 8 – 3:00-5:00