

Fall 2016 – STEM 4033 - Tentative Schedule

Week 1

Tuesday, August 23

- Introductions
- Touchdown Design Challenge
- Syllabus Review
- Intro to STEM Education PP
- Readings: [STEM Education It's Elementary](#) and [Intel Foundation: Changing Attitudes is Key in STEM Education](#) articles

Thursday, August 25

- Reading Review
- Intro to STEM Education PP (cont.)
- The Design Loop PP
- Readings: Ch. 1 - Introduction and Background and History of the STEM Movement in *The Overlooked STEM Imperatives* (pgs. 2 – 9), [Many High Schoolers giving Up on STEM](#) and [Elementary Teachers and the Crisis in STEM Education](#) articles

Week 2

Tuesday, August 30

- Reading Review
- Space Frame Challenge (using simple tools and materials)
- Reading: 1 – 17 in PBL text and Chapter 2 – Power and Promise of STEM Education in the *The Overlooked STEM Imperatives*

Thursday, September 1

- Reading Review
- Space Frame Challenge Testing and Discussion
- The Design Process – Spring Into Action – Wile E. Coyote Design Challenge
- Assignment – Creating a Design Loop
- Reading: 19-43 in the PBL text and A Framework for STEM Problem Solving

Week 3

Tuesday, September 6

- Reading Review
- Design Loop Presentations
- Teaching Creativity PP
- Reading: 45-74 in the PBL text and [Why Creativity Now – A Conversation with Sir Ken Robinson](#)

Thursday, September 8

- Reading Review
- Teaching Creativity (continued)
- Creativity Assignment
- Reading: Chapter 3 – ‘T’ and ‘E’ in STEM in the *The Overlooked STEM Imperatives*

Week 4

Tuesday, September 13

- Reading Review
- Curriculum Design and Assessment PP
- Narrative Curriculum Assignment (Due September 22)
- Reading: Writing a STEM Design Brief and [Toward Narrative-Centered Learning Environments](#)

Thursday, September 15

- Reading Review
- Curriculum Design and Assessment (continued)
- Reading: Integrating Literacy and Engineering Instruction for Young Learners

Week 5

Tuesday, September 20

- Reading Review
- Curriculum Design and Assessment (continued)
- Rubric Planning Sheet, Engineering Journal Booklets, Design Logs

Thursday, September 22

- Narrative Curriculum Assignment Due
- Presentations of Narrative Curricula

Week 6

Tuesday, September 27

- Technical Procedural Problem Solving PP
- Writing a Technical Procedural STEM Problem handout/reading
- Teacher Geek – Technical Procedural Curriculum Assignment (Due October 6)

Thursday, September 29

- Technical Procedural Design Challenge - [Teacher Geek – Rubber Band Racer](#)

Week 7

Tuesday, October 4

- Technical Procedural Design Challenge (continued)

Thursday, October 6

- Technical Procedural Curriculum Assignment Due – Presentations
- Using Blocks and Construction Toys for Teaching STEM PP
- Engineering Design Curriculum-Assignment Construction Blocks (Due October 25)
- Readings: [Using Block Play](#) and [Blocks as a Tool for Learning](#)

Week 8

Tuesday, October 11 – No Class - ISEA (October 9-11)

Thursday, October 13

- Reading Review
- Keva Maze Design Challenge
- [KEVA Resources](#)

Week 9

Tuesday, October 18 – No Class – Fall Break (October 17-18)

Thursday, October 20 – ISMTEC Thailand (October 14-23) - *Guest Speaker

- Construction Block Curriculum Team Development

Week 10

Tuesday, October 25

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

Thursday, October 27

- Lego WeDo Robotics – Bring laptops to class

Week 11

Tuesday, November 1

- The Quick Challenge PP
- Quick Challenge Sample
- Quick Challenge Checklist
- Quick Challenge Assignment (Due November 8)

Thursday, November 3

- Quick Challenge peer review
- Introduction to Electricity

Week 12

Tuesday, November 8

- Building electrical circuits
- Holiday Themed Electricity Assignment (Due November 17)

Thursday, November 10 – No Class – Mississippi Valley Conference (November 9-12)

Week 13

Tuesday, November 15

- Complete Electricity Assignment – Lab day

Thursday, November 17

- Electricity Curriculum Assignment Due – Presentations
- Introduction to Paper Engineering
- Pop-Up Card Assignment

***November 18 – Arkansas (TSA) River Valley Technology Challenge – Fort Smith**

Week 14

Tuesday, November 22

- Pop-Up Card Assignment Due – Presentations
- Butterfly Wing Design – Using scientific evidence to inform design

Thursday, November 24 – No Class – Thanksgiving (November 23-25)

Week 15

Tuesday, November 29

- Butterfly Wing Design – Using scientific evidence to inform design

Thursday, December 1 –ACTE (November 20 - December 3) – Guest Speaker

Week 16

Tuesday, December 6

- Butterfly Wing Design – Using scientific evidence to inform design

Thursday, December 8

- Butterfly Wing Design – Using scientific evidence to inform design

***December 9 – Razorback STEM Challenge**

Final Exams

STEM 4033 – 11:00-12:15 – Daugherty –Tuesday, December 13 – 10:15-12:15

STEM 4033 – 3:30-4:45 – Carter – Tuesday, December 13 – 3:15-5:15

TEED 4103 – 9:30-10:45 – Carter – Thursday, December 15 – 8:00-10:00