

## 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.)
- 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 Loop PP
- The Design Process – The Dog Bone Slinger
- 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)**

**-Alternative assignment for not attending the ISEA Conference -**

### **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

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

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

**Week 15**

**Tuesday, November 29**

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

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

**Week 16**

**Tuesday, December 6**

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

**Thursday, December 8**

- Scientific Inquiry and Engineering 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**