



UNIVERSITY OF NORTH GEORGIA  
College of Education

**SIED4184 ELEMENTARY SCIENCE TEACHING METHODS  
FALL 2017**

View Supplemental Syllabus at <http://ung.edu/academic-affairs/policies-and-guidelines/supplemental-syllabus.php>

**CAMPUS CARRY** - Georgia House Bill 280, commonly referred to as the “campus carry” legislation, takes effect as of July 1, 2017. For more information on this new law (which amends O.C.G.A. § 16-11-127.1) and how it will be implemented on University System of Georgia campuses, please read [Chancellor Wrigley’s guidance to the USG community](#), dated May 24, 2017.

**GENERAL INFORMATION**

**Instructor: Donna Governor, PhD**

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Email: [donna.governor@ung.edu](mailto:donna.governor@ung.edu)

Office Hours: Tuesday 2:00 – 5:00, Wednesday 10:00 – Noon, & 3:00 – 4:00

**TEXT, TECHNOLOGY AND OTHER MATERIALS**

**Text:** You will be reading free, open resource documents throughout this course in place of a traditional textbook. Most of the readings will come from reports from the National Academy of Science and published by the National Academies Press. You will need to create an account at: <https://www.nap.edu/> to download readings. Weekly readings are listed in the class schedule (below).

**Supplemental Readings:** TBD

**LiveText, Inc.:** All students in Teacher Education programs must have a subscription LiveText.

LiveText is an online management system for all materials and documents, a way to collaborate online with fellow students and faculty, and a way to submit assignments for feedback. LiveText provides online help. You may also contact Kathy Moody at [kmoody@ung.edu](mailto:kmoody@ung.edu) for assistance. If you do not purchase and activate/register LiveText by the end of drop/add, you may be 'withdrawn without penalty' (W) from class.

For those without LiveText, go to your bookstore or purchase online at [www.livetext.com](http://www.livetext.com). Purchase and register for the 'Field Experience Edition', being sure to add your student employee number correctly. Use your @ung.edu email address and register with the 'University of North Georgia'.

For those with LiveText through another institution, contact LiveText at [support@livetext.com](mailto:support@livetext.com) (866-548-3839) and ask them to 'add the University of North Georgia domain to username [your LT username]'. Do not ever repurchase LiveText! If your subscription has expired, you are able to add subscription years to your current account at minimal expense.

If you have LiveText but not the 'Field Experience module', you will need to have the \$15 'add-on program' added to your current account. Do not repurchase LiveText! Log into your LiveText account. Click on 'My Accounts' (in upper right corner) and purchase the 'FEM add-on' for \$15. This will allow us to place you in your field experiences.

### Online Resource: Desire to Learn (D2L):

University System of Georgia's **Desire2Learn Help Center** provides assistance through their 'knowledge base' <http://d2lhelp.view.usg.edu/> & 855.772.0423. The USG D2L Help Center is available 24 hours a day, 7 days a week. The Online Support Center site includes a 'knowledge base'. There are sections for students & instructors. You can also call for [technical support](#). Please encourage students to check the 'knowledge base' before calling tech support. Also reference [CTLE's D2L website](#).

D2L will be the primary repository of all course documents, discussions, grades and weekly quizzes. You are expected to check D2L regularly, with a minimum of once per week.

### COURSE DESCRIPTION

This course is designed to prepare K-5 pre-service teachers to deliver hands-on, content rich science instruction and to help students understand core ideas and practices in science. This course provides opportunities for teacher candidates to learn and understand how to teach the cross cutting concepts and core ideas, and scientific practices of earth, physical, and life sciences that are aligned to the Georgia Standards for Excellence (GSE) and the Next Generation Science Standards (NGSS). The course will also examine psychological underpinnings of science learning, elementary science curricula and standards, classroom layout and safety, assessment, and science in popular literature. Guided field experience is required.

### COURSE OBJECTIVES (EXPECTED OUTCOMES)

*Revised August 2016*

Objective 1	The student will be able to understand the nature of scientific evidence.
INTASC	4, 5, & 7
NSTA	NSTA Standard 1: Content Knowledge Effective teachers of science understand and articulate the knowledge and practices of contemporary science. They interrelate and interpret important concepts, ideas, and applications in their fields of licensure.
COE CONCEPTUAL FRAMEWORK	1a. The teacher candidate is intellectually engaged through critical thinking and creative problem-solving in theory and practice 2a. The teacher candidate utilizes research based teaching and learning through content literacy. 1c. The teacher candidate is intellectually engaged through professional collaboration and communication.
ISTE-T	1b. Engage students in exploring real-world issues and solving authentic problems using digital tools and resources 1d. Model collaborative knowledge construction by engaging in learning with students, colleagues, and others in face-to-face and virtual

	environments 3a. Demonstrate fluency in technology systems and the transfer of current knowledge to new technologies and situations 4b. Address the diverse needs of all learners by using learner-centered strategies providing equitable access to appropriate digital tools and resources 4d. Develop and model cultural understanding and global awareness by engaging with colleagues and students of other cultures using digital age communication and collaboration tools.
EVALUATION METHOD	Class Discussion & Reading Quizzes
Objective 2	The student will be able to utilize the scholarly literature to find materials and information for their classroom.
INTASC	1, 3, 4,5, 7, 8, 9, 10
NSTA	Standard 6: Professional Knowledge and Skills Effective teachers of science strive continuously to improve their knowledge and understanding of the ever changing knowledge base of both content, and science pedagogy, including approaches for addressing inequities and inclusion for all students in science. They identify with and conduct themselves as part of the science education community.
COE CONCEPTUAL FRAMEWORK	1a. The teacher candidate is intellectually engaged through critical thinking and creative problem-solving in theory and practice. 1b. The teacher candidate is intellectually engaged through active engagement in reflective practice. 1c. The teacher candidate is intellectually engaged through professional collaboration and communication. 1d. The teacher candidate is intellectually engaged through commitment to on-going professional development. 2a. The teacher candidate utilizes research-based teaching and learning through maintaining content literacy. 2b. The teacher candidate utilizes research-based teaching and learning through data driven decision making.
ISTE-T	3d. Model and facilitate effective use of current and emerging digital tools to locate, analyze, evaluate, and use information resources to support research and learning. 4a. Advocate, model, and teach safe, legal, and ethical use of digital information and technology, including respect for copyright, intellectual property, and the appropriate documentation of sources. 5d. Contribute to the effectiveness, vitality, and self-renewal of the teaching profession and of their school and community.
EVALUATION METHOD	Research Position Paper NSTA Learning Center Library Project
Objective 3	The student will be able to use assessments to inform teaching practice.
INTASC	1, 4, 5, & 7
NSTA	NSTA Standard 5: Impact on Student Learning Effective teachers of science provide evidence to show that P-12 students' understanding of major science concepts, principles, theories, and laws have changed as a result of instruction by the candidate and that student knowledge is at a level of understanding beyond memorization. Candidates provide evidence for the diversity of students they teach.
COE CONCEPTUAL FRAMEWORK	2a. The teacher candidate utilizes research-based teaching and learning through maintaining content literacy. 2c. The teacher candidate utilizes research-based teaching and learning through student centered practices. 2d. The teacher candidate utilizes research-based teaching and learning through technological literacy.
ISTE-T	1c. Promote student reflection using collaborative tools to reveal and clarify students' conceptual understanding and thinking, planning, and creative processes 3a. Demonstrate fluency in technology systems and the transfer of current knowledge to new technologies and situations 3b. Collaborate with students, peers, parents, and community members using digital tools and resources to support student success and innovation 5c. Evaluate and reflect on current research and professional practice on a regular basis to make effective use of existing and emerging digital tools and resources in support of student learning
EVALUATION METHOD	Lesson Plans and Teaching Demonstrations
Objective 4	The student will be able to identify student conceptions and misconceptions and use to guide instruction.
INTASC	1, 4, 5, 7, 8,
NSTA	NSTA Standard 2: Content Pedagogy Effective teachers of science understand how students learn and develop scientific knowledge. Preservice teachers use scientific inquiry to develop this knowledge for all students.
COE CONCEPTUAL FRAMEWORK	1b. The teacher candidate is intellectually engaged through active engagement in reflective practice. 2c. The teacher candidate utilizes research-based teaching and learning through student centered practices.
ISTE-T	3c. Communicate relevant information and ideas effectively to students, parents, and peers using a variety of digital age media and formats. 5a. Participate in local and global learning communities to explore creative applications of technology to improve student learning 5b. Exhibit leadership by demonstrating a vision of technology infusion, participating in shared decision making and community building, and developing the leadership and technology skills of others.
EVALUATION METHOD	Lesson Plans, Reflections, and Video Analysis
Objective 5	The student will be able to assemble and deliver content rich, hands-on, inquiry based activities.
INTASC	1, 2, 3, 4, 5, 6, 7, 8, 9
NSTA	NSTA Standard 3: Learning Environments Effective teachers of science are able to plan for engaging all students in science learning by setting appropriate goals that are consistent with knowledge of how students learn science and are aligned with state and national standards. The plans reflect the nature and social context of

	science, inquiry, and appropriate safety considerations. Candidates design and select learning activities, instructional settings, and resources--including science-specific technology, to achieve those goals; and they plan fair and equitable assessment strategies to evaluate if the learning goals are met.
COE CONCEPTUAL FRAMEWORK	1a. The teacher candidate is intellectually engaged through critical thinking and creative problem-solving in theory and practice. 2c. The teacher candidate utilizes research-based teaching and learning through student centered practices. 2e. The teacher candidate utilizes research-based teaching and learning through immersion in the learning community through field experience and clinical practice. 3a. The teacher candidate will provide advocacy and service by promoting social justice and education as a human right for the individual and their communities. 3b. The teacher candidate will provide advocacy and service through their leadership. 3c. The teacher candidate will provide advocacy and service through ethical practice. 3d. The teacher candidate will provide advocacy and service by practicing professional accountability.
ISTE-T	1a. Promote, support, and model creative and innovative thinking and inventiveness. 2a. Design or adapt relevant learning experiences that incorporate digital tools and resources to promote student learning and creativity. 2b. Develop technology-enriched learning environments that enable all students to pursue their individual curiosities and become active participants in setting their own educational goals, managing their own learning, and assessing their own progress. 2c. Customize and personalize learning activities to address students' diverse learning styles, working strategies, and abilities using digital tools and resources. 2d. Provide students with multiple and varied formative and summative assessments aligned with content and technology standards, and use resulting data to inform learning and teaching.
EVALUATION METHOD	Lesson Plans, Video Analysis, and GSE Analysis
<b>Objective 6</b>	<b>The student will understand the safety issues related lab science activities.</b>
INTASC	5, 7, 8
NSTA	NSTA Standard 4: Safety Effective teachers of science can, in a P-12 classroom setting, demonstrate and maintain chemical safety, safety procedures, and the ethical treatment of living organisms needed in the P-12 science classroom appropriate to their area of licensure.
COE CONCEPTUAL FRAMEWORK	2a. The teacher candidate utilizes research-based teaching and learning through maintaining content literacy. 3c. The teacher candidate will provide advocacy and service through ethical practice. 2d. The teacher candidate utilizes research-based teaching and learning through technological literacy. 2e. The teacher candidate utilizes research-based teaching and learning through immersion in the learning community through field experience and clinical practice.
ISTE-T	4c. Promote and model digital etiquette and responsible social interactions related to the use of technology and information.
EVALUATION METHOD	Lesson Plan Safety documentation and Safety Posters

## METHODS OF INSTRUCTION

Face-to-face	Online Learning Environment	PDC Classrooms
Collaborative Group Learning	Professor Demonstrations/Presentation	Simulations

## ATTENDANCE

The nature and design of this course requires your attendance for the various learning activities that take place, therefore, **attendance is required at ALL sessions for this course**. Should they occur, individual absences will result in a 5% deduction from your overall grade. Students missing more than four classes, *for excused or unexcused reasons*, will be withdrawn from the course and given a grade of 'WF.' The only excuses for absence are personal illness, personal/family emergency, and death of someone in the immediate family and ONLY with documentation.

**Coming to class on time is also a critical component of this class; therefore, being tardy (coming in five minutes or more after scheduled start time) will be equal to half of an unexcused absence.** In addition to grade consequences, excessive absences and tardies will be noted in the College of Education disposition reporting system.

Students should make copies of all assignments they wish to keep prior to submission for grading. The original document should be submitted for grading. Late assignments carry a penalty of **10% per day late**.

In addition to the **5% per absence penalty**, any work missed due to an unexcused absence will receive a grade of zero (0). Work missed with an excused absence **will be graded only after official documentation** substantiating the absence is turned in to the instructor. Each case, should they arise, will be judged individually.

If a student's absences exceed 14% of the scheduled class meetings for the semester or the student fails to attend 10% of any class meetings prior to the midpoint of the term, the student will be subject to being dropped from the class roll with a 'WF'.

Documentation accounting for a student's absence may be requested. Please note that habitual tardiness and/or absences to class will affect your grade and may result in your removal from the roll.

If a student chooses to withdraw from the course it is that student's responsibility to complete the withdrawal process. Students who cease attending class without formally withdrawing receive a grade of WF for the course. Students with two or more absences may receive a grade of WF.

Grades of I (Incomplete) are awarded only in cases of serious illness and other significant non-academic circumstances. The instructor reserves the right to make the final decision with regard to granting a grade of "I".

### COURSE COMMUNICATION

When questions arise outside of class time, please feel free to contact me. Outside of class, I am available during office hours, through UNG email, or by phone. **UNG Email is the quickest way to reach me**, but please respectfully allow 48 hours, not including weekends and holidays, for a reply.

### EVALUATION METHODS

Your grade in this course will depend on a number of factors. The percentages for each area of evaluation are listed below. *The instructor reserves the right to amend the evaluation topics and percentages with advance notice provided to the students.* **All submissions must be YOUR ORIGINAL work. Plagiarism will result in a grade of ZERO. Every submission will be checked for originality through the Turnitin.com system.**

Categories	Items	Weight	Due Date
Midterm Position Paper 15%	KEY ASSESSMENT: Position Paper	15%	October 13
Unit Lesson Plan 50%	KEY ASSESSMENT: Lesson Plan 1 To be taught between Oct. 23 & Nov. 3	15%	October 20
	KEY ASSESSMENT: Lesson Plan 2 To be taught between Nov. 6 & Nov. 17	15%	November 3
	KEY ASSESSMENT: Reflection 1	10%	November 17
	KEY ASSESSMENT: Reflection 2	10%	December 1
Weekly Reading Assignments 25%	Reading Quizzes and/or Online Discussion Participation	25%	Weekly
Class Projects 10%	NSTA Learning Center Library & Other In Class Activities	10%	Various
<b>FINAL GRADE</b>		<b>100%</b>	

## COURSE GRADING

### 1. Midterm Position Paper (15%)\*\*\*Key Assessment\*\*\*

You will write a position paper on the teaching of science that includes your views on the teaching of science – as a paper for this course. This is one of key assessments for this course and will be submitted **via LiveText**. (see Guideline & rubric). You will be writing this paper in sections throughout the first half of the course. By October 13 you will compile those sections into a midterm paper and submit to Livetext for your midterm paper.

### 2. Lesson Plans (30%) \*\*\*Key Assessment\*\*\*

You will Develop two lessons of curriculum from your interests in K-5 science: The lessons will need to be approved by your mentor teacher and written in a detailed lesson plan format. This format is specifically designed for science based lessons.

- Your lesson plan includes copies of activities used, including rubrics and/or assessments.
- The lesson plans should be **investigations** that include all aspects of 3 dimensional learning.
- You address assessment appropriately, including formative assessments to examine whether the objectives are met in all sections of the lesson.
- **LESSONS WILL NEED TO BE TAUGHT AND VIDEO RECORDED FOR ANALYSIS AND REFLECTION. PLAN EARLY TO COORDINATE WITH YOUR MENTOR TEACHER.**
- **Document and submit the following:** Lesson plan (use template), student handouts & artifacts, any assessments (i.e., worksheets or rubrics).
- **Lesson plans will be rejected (for a grade of zero) if they do not meet minimum criteria, including:**
  - Missing safety requirements
  - Lack of investigation component
  - NOTE: If your lesson has no materials other than a book, video or handout, it is not likely to be an investigation and likely to be rejected

### 3. Reflection Videos & Papers (20%)\*\*\*Key Assessment\*\*\*

Two reflection papers will be written:

- Upload a 2-minute video segment from you lesson.
- Write a 1-page (minimum) reflection paper based on feedback from your presentation and teaching experience at your practicum classroom. This will be concentrated on the video segment you upload.
- **This is not the same as the questions at the end of the EdTPA lesson plan template. You will be required to go above and beyond the basic questions provided.**

### 4. Weekly Reading Quizzes (25%)

There will be a set of questions related to each week's reading assignments that will be answered for each week's reading. This will be completed each week as a "quiz" in D2L and is due on the Saturday BEFORE the class we will be discussing the readings in. Each and every class we will discuss our assigned reading topics in class and you are expected to fully participate. Each week's online "quiz" will include a place for a reflection on the previous week's discussion.

### 5. Class Projects (10%)

We will be doing several projects, by group or individually, throughout this semester. Details about each project will be provided prior to each activity.

## WRITTEN ASSIGNMENTS

**All must be typed** in 12-point standard-sized font. All double-spaced assignments should contain your name, course number (SIED4184), and page numbers where appropriate.

## IN-CLASS ACITIVITIES

This course includes some science laboratory and/or other science-learning activities. All students in your group are responsible for contributing equally to the activity and its write-up. At the end of each activity, make sure you clean your table. All materials should be cleaned and left to dry or put back in the appropriate place.

## MAKE-UP POLICY

You are responsible for any material/information missed during an absence excused or unexcused). Late assignments are ONLY accepted for an excused absence and MUST be submitted with documentation at the next class meeting. Online assignments will have a 10% reduction in the grade occur each day they are late. Otherwise, late assignments will not be accepted and be given a grade of zero.

## ACADEMIC INTEGRITY POLICY

Any violations of the Academic Integrity Policy will result in an automatic zero for the assignment and a referral to the office of the Dean of Students under the [Student Code of Conduct](#).

**Plagiarism and Turnitin.com:** Students agree that by taking this course all required papers may be subject to submission for textual similarity review to Turnitin.com for the detection of plagiarism. All submitted papers will be included as source documents in the Turnitin.com reference database solely for the purpose of detecting plagiarism of such papers. Use of the Turnitin.com service is subject to the Terms and Conditions of Use posted on the Turnitin.com site.

**Copyright:** Both Federal and State laws forbid the unlawful duplication of copyrighted computer software or other reproductions of copyrighted material. In accordance with these policies, University of North Georgia expressly forbids the copying of such materials supplied by or used in the College. Unlawful duplication of copyrighted materials by a user may result in disciplinary action by the College under the Student Code of Conduct (Non-Academic Infractions--Prohibitions, Theft), and/or possible criminal action by the owner of the copyright.)

## DISRUPTIVE BEHAVIOR POLICY

Students who exhibit behaviors that are considered to obstruct or disrupt the class or its learning activities are subject to sanctions under the Board of Regents Policy on Disruptive Behavior. Behaviors which may be considered to be inappropriate in this classroom includes, but is not limited to, sleeping, coming in late, talking out of turn, inappropriate use of laptops or mobile devices, verbal behavior that is disrespectful of other students or the faculty member, or other behaviors that may be disruptive. Students who exhibit such behavior may be temporarily dismissed from the class by the instructor and will be subject to disciplinary procedures outlined in the Student Handbook.

## COURSE CALENDAR

- First Day of Class: August 28
- Drop/Add period ends: August 25
- Withdrawal Deadline: October 13
- Online Learning Day(s): September 11
- Holiday: September 4
- Classes end: December 8

**SIED4184 Course Weekly Schedule**

Date(s)	Topic(s)	Activities & Assignments
<b>Week 1: Aug 28</b>	Course Overview Syllabus, Introductions, Safety, NSTA Learning Center	<p><u>In Class:</u></p> <ol style="list-style-type: none"> <li>1. STEBI pre-assessment</li> <li>2. Safety Readings: <ul style="list-style-type: none"> <li>• <a href="#">Science &amp; Safety, It's Elementary</a></li> <li>• <a href="#">Safety in the Elementary Classroom</a></li> </ul> </li> <li>3. Create NSTA LC Account</li> </ol> <p><u>After Class:</u></p> <ol style="list-style-type: none"> <li>1. Building your LC Library <b>DUE 9/11</b></li> </ol>
<b>Reading Assignment:</b>	<p><b>Read &amp; Complete Quiz by 9/9:</b>  <a href="#">Taking Science to School</a>, Chapter 2: Goals for Science Education AND Chapter 6: Understanding How Scientific Knowledge is Created</p>	
<b>Sept 4</b>	<b>Labor Day (No Class)</b>	
<b>Week 2: Sept 11 Online Class Meeting</b>	Nature of Science	<p><u>In Class:</u></p> <p>Video: <a href="#">How Simple Ideas Lead to Scientific Discoveries</a></p> <p>Activity: <a href="#">Understanding Science</a> (online)</p> <p>Note: Participate in online discussion</p> <p><u>After Class:</u></p> <p>Write a 1-page essay about why teaching science is important. Include citations from assigned &amp; other references. APA format.</p>
<b>Reading Assignment:</b>	<p><b>Read &amp; Complete Quiz by 9/16:</b>  <a href="#">How People Learn</a>, Chapter 1: Learning – from Speculation to Science  <a href="#">Ready Set Science</a>, Chapter 3: Foundational Knowledge and Conceptual Change</p>	
<b>Week 3: Sept 18</b>	Learning Theories & Conceptual Change	<p><u>In Class:</u></p> <p>Videos: <a href="#">Lessons from Thin Air</a> (segment), <a href="#">Conceptual Change</a></p> <p>Activity: Conceptual Cartoons</p> <p><u>After Class:</u></p> <p>Write 1-page essay about your position on how students learn science. Include citations from assigned AND additional references. APA format.</p>
<b>Reading Assignment:</b>	<p><b>Read &amp; Complete Quiz by 9/23:</b>  (1) <a href="#">Seeing Students Learn Science</a>, (2017) Chapter 1: What's Really Different? pages 1-18 only  (2) <a href="#">Science Teachers' Learning: Enhancing Opportunities, Creating Supportive Contexts</a>, (2015) Chapter 2: A New Vision of Science Teaching &amp; Learning, pages 27-46</p>	



<b>Week 4: Sept 25</b>	3D Learning, Including: <ul style="list-style-type: none"> <li>• Science &amp; Engineering Practices</li> <li>• Cross Cutting Concepts</li> </ul>	<u>In Class:</u> Video: <a href="#">Doing Science</a> Activity: Comparing Standards <u>After Class:</u> Write 1-page essay about your position on how science should be taught. Include citations from assigned AND additional references. Include readings due 10/2 in your references. APA format.
<b>Reading Assignment:</b>	<b>Read &amp; Complete Quiz by 9/30:</b> <a href="#">Ready Set Science</a> , Chapter 7: Learning from Science Investigations <a href="#">Inquiry and the National Science Education Standards</a> , Chapter 6: Making the Case	
<b>Week 5: Oct 2</b>	Investigations & Inquiry	<u>In Class:</u> Video: <a href="#">3 Rules to Spark Learning</a> Activity: Levels of Inquiry Experience <u>After Class:</u> Write 1-page essay about your position on how science should be assessed. Include citations from assigned AND additional references. Include readings due 10/9 in your references. APA format.
<b>Reading Assignment:</b>	<b>Read &amp; Complete Quiz by 10/7:</b> <a href="#">Developing Assessments for the Next Generation Science Standards</a> Chapter 4: Classroom Assessment	
<b>Week 6: Oct 9</b>	Assessment	<u>In Class:</u> Video: <a href="#">Making a Rubric</a> Activity: Who is Most Talented? <u>After Class:</u> <b>MIDTERM POSITION PAPER DUE 10/13 to Livetext:</b> Compile and condense essays into single paper, maximum of 3 pages
<b>Reading Assignment:</b>	<b>Read &amp; Complete Quiz by 10/14:</b> <a href="#">The BSCS 5E Instructional Model: Origins &amp; Effectiveness</a>	
<b>Week 7: Oct 16</b>	Strategies: 5E Model	<u>In Class:</u> Video: <a href="#">Teaching with the 5E Learning Cycle</a> Activity: 5E Experience <u>After Class:</u> <b>LESSON 1 DUE 10/20 to Livetext</b>
<b>Reading Assignment:</b>	<b>Read &amp; Complete Quiz by 10/21:</b> <a href="#">Taking Science to School</a> , Chapter 9: Teaching science as practice <a href="#">Effective Instruction, What Does Research Tell Us?</a>	

<b>Week 8: Oct 23</b>	Planning	<u>In Class:</u> Video: <a href="#">Using Phenomena</a> Activity: Developing Phenomena <u>After Class:</u> Teach Lesson 1
<b>Reading Assignment:</b>	<b>Read &amp; Complete Quiz by 10/28:</b> <a href="#">Literacy for Science</a> , Chapter 4: Weaving Science & Literacy Together Across the Grades <a href="#">STEM Integration in K-12 Education</a> , Chapter 2: A Descriptive Framework for Integrated STEM Education, p.31-50	
<b>Week 9: Oct 30</b>	Integration	<u>In Class:</u> Video: <a href="#">Common Sense</a> Activity: Collaborating on Integrated Unit Plans <u>After Class:</u> <b>LESSON 2 DUE 11/3 to Livetext</b>
<b>Reading Assignment:</b>	<b>Read &amp; Complete Quiz by 11/4:</b> <a href="#">Engineering in K-12 Education</a> , Chapter 5: Teaching and Learning Core Engineering Concepts and Skills in Grades K–12	
<b>Week 10: Nov 6</b>	Engineering	<u>In Class:</u> Video: <a href="#">Engineering Crash Course</a> Activity: Experience Engineering <u>After Class:</u> Teach Lesson 2
<b>Reading Assignment:</b>	<b>Read &amp; Complete Quiz by 11/11:</b> <a href="#">Frameworks for K-12 Science Education</a> , Chapter 11: Equity & Diversity in Science & Engineering Education	
<b>Week 11: Nov 13</b>	Differentiation Equity & Diversity	<u>In Class:</u> Video: <a href="#">Closing the Gender Gap</a> Activity: Examining Bias ( <a href="#">Project Implicit</a> ) <u>After Class:</u> <b>REFLECTION 1 DUE 11/17 to Livetext</b>
<b>Reading Assignment:</b>	<b>Read &amp; Complete Quiz by 11/25:</b> <a href="#">Surrounded by Science</a> , Chapter 1: Informal Environments for Learning Science	
<b>Nov 20</b>	<b>UNG Fall Break</b>	
<b>Week 12: Nov 27</b>	Learning Beyond the Classroom	<u>In Class:</u> Video: <a href="#">Economic Value of Informal Science Education</a> Activity: STEBI Post-assessment <u>After Class:</u> <b>REFLECTION 2 DUE 12/1 to Livetext</b>