



## ELED 437.71E: Integrated Learning- Math, Science & Technology in

### Field-Based Settings

### COURSE SYLLABUS: Fall 2014

**Instructor:** Tammy Schwartz, M.Ed., Senior Lecturer

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#### COURSE INFORMATION

##### Room # 202

**Required textbook:** Rosado, L.A. (2014). TExES Generalist EC-6 (191) Book + Online (TExES Teacher Certification Test Prep), 2<sup>nd</sup> edition.

ISBN-10: 0-7386-1051-8 | ISBN-13: 978-0-7386-1051-1 | Edition: **Second Edition, Revised**

*(This text is required for ELED 437, ELED 438, and RDG 448)*

##### Required materials:

1. (1) 2" inch binder and (2 pkg.) 8 count dividers
2. TExES Vocabulary flashcards for Science, Math, Social Studies, and Reading <http://quizlet.com/2470918/flashcards>
3. TExES Preparation: Generalist EC-6 (191) at: <http://cms.texas-ets.org/texas/prepmaterials/texas-preparation-manuals/>
4. Texas Administrative Code (TAC), Title 19, Part II Chapter 111. Texas Essential Knowledge and Skills for Mathematics: Subchapter A (K-5) and Subchapter B (6<sup>th</sup>). PDF versions available at the bottom of the webpage <http://ritter.tea.state.tx.us/rules/tac/chapter111/index.html>
5. Texas Administrative Code (TAC), Title 19, Part II Chapter 112. Texas Essential Knowledge and Skills for Science: Subchapter A (K-5) and Subchapter B (6<sup>th</sup>). PDF versions available at the bottom of the webpage <http://ritter.tea.state.tx.us/rules/tac/chapter112/index.html>
6. Texas Administrative Code (TAC), Title 19, Part II Chapter 126. Texas Essential Knowledge and Skills for Technology Applications: Subchapter A (K-5) and Subchapter B

(6<sup>th</sup>). PDF versions available at the bottom of the webpage  
<http://ritter.tea.state.tx.us/rules/tac/chapter126/index.html>

7. English Language Proficiency Standards (ELPS)  
<http://ritter.tea.state.tx.us/rules/tac/chapter074/ch074a.html#74.4>
8. Proposed revisions to the mathematics TEKS at:  
<http://www.tea.state.tx.us/index2.aspx?id=2147499971>
9. Edmodo.com account and gmail account

**Other resources:**

- National Science Teachers Association: Science Standards <http://www.nsta.org/about/standardsupdate/>
- National Science Standards at:  
[http://www.education.ne.gov/science/Documents/National\\_Science\\_Standardspdf.pdf](http://www.education.ne.gov/science/Documents/National_Science_Standardspdf.pdf)
- National Council of Teachers of Mathematics: Math Standards and Expectations at: <http://www.nctm.org/standards/content.aspx?id=4294967312>
- <http://www.nasa.gov/audience/foreducators/index.html>
- <http://www.nsf.gov/discoveries/>
- <http://www.pbs.org/teachers/stem/>
- <http://www.stem-k20.com/teachingresources/>

**Course Description:**

This field-based course will focus on how EC-6 children learn and develop knowledge and skills in mathematics and science; varied instructional and assessment strategies that require high expectations and worthwhile opportunities for all students; Texas Essential Knowledge and Skills (TEKS) in mathematics and science; resources for teaching mathematics, and science in grades EC-6; and the integration of technology in mathematics and science instruction grades EC-6.

**Course Objectives:**

Objectives are from the Domain II, Competency 13-Competency 18 (Mathematics), Domain III, Competency 19-23 (Social Studies) and Domain IV, Competency 24-41 (Science) in the TEXES Preparation Manual Generalist (191) – EC-6

**Student Learning Outcomes:**

**Objectives for the course will be based upon the Texas Educator Standards so that the students may have the experiences that lead to the knowledge and skills that an entry-level educator in the field of elementary education in the area of Social Studies in Texas public school must possess.**

**Domain II Mathematics** comprises approximately 19% of the TExES Generalist EC-6 (191). In this course we will work with the Mathematics Essential Knowledge and Skills for grades K-6. The TEKS will be paired with the Educator Competencies.

**Competency 13 (Mathematics Instruction- Standard 7):** The teacher understands how students learn mathematical skills and uses that knowledge to plan, organize, and implement instruction and assess learning.

**Competency 14 (Number Concepts and Operations – Standard 1):** The teacher understands concepts related to numbers, operations and algorithms.

**Competency 15 (Patterns and Algebra- Standard 2):** The teacher understands concepts related to patterns, relations, functions, and algebraic reasoning.

**Competency 16 (Geometry and Measurement- Standard 3):** The teacher understands concepts and principles of geometry and measurement.

**Competency 17 (Probability and Statistics- Standard 4):** The teacher understands concepts related to probability and statistics and their applications.

**Competency 18 (Mathematical Processes- Standard 5):** The teacher understands mathematical processes and knows how to reason mathematically, solve mathematical problems, and make mathematical connections within and outside of mathematics.

**Domain IV Science** comprises approximately 18% of the TExES Generalist EC-6 (191). In this course we will work with the Science Essential Knowledge and Skills for grades K-6. The TEKS will be paired with the Educator Competencies.

**Competency 24 (Safe and Proper Laboratory Processes):** The teacher manages classroom, field and laboratory activities to ensure the safety of all students and the ethical care and treatment of organisms and specimens.

**Competency 25 (Scientific Inquiry):** The teacher understands the history and nature of science, process and role of scientific inquiry, and the role of inquiry in science instruction.

**Competency 26 (Impact on Daily Life/Environment):** The teacher understands how science affects the daily lives of students and interacts with and influences personal and societal decisions.

**Competency 27 (Unifying Concepts and Processes in Science):** The teacher knows unifying concepts and processes that are common to all sciences.

**Competency 28 (Theory and Practice of Teaching Science):** The teacher has theoretical and practical knowledge about teaching science and about how students learn science.

**Competency 29 (Assessments in Science Learning):** The teacher knows the varied and appropriate assessments and assessment practices to monitor science learning in laboratory, field, and classroom settings.

**Competency 30 (Physical Science):** The teacher understands forces and motion and their

relationships.

**Competency 31 (Physical Science):** The teacher understands the physical and chemical properties of and changes in matter.

**Competency 32 (Physical Science):** The teacher understands energy and interactions between matter and energy.

**Competency 33 (Physical Science):** The teacher understands the energy transformations and the conservation of matter and energy.

**Competency 34 (Life Science):** The teacher understands the structure and function of living things.

**Competency 35 (Life Science):** The teacher understands reproduction and the mechanisms of heredity.

**Competency 36 (Life Science):** The teacher understands adaptations of organisms and theory of evolution.

**Competency 37 (Life Science):** The teacher understands the relationships between organisms and the environment.

**Competency 38 (Earth and Space Science):** The teacher understands the structure and function of earth systems.

**Competency 39 (Earth and Space Science):** The teacher understands cycles in Earth systems.

**Competency 40 (Earth and Space Science):** The teacher understands the role of energy in weather and climate.

**Competency 41 (Earth and Space Science):** The teacher understands the characteristics of the solar system and the universe.

## COURSE REQUIREMENTS

**Grading: ELED 437: STEM:** Attendance and Participation is required (please email or text the instructor if you will be out)

Internship: ITEP, Journals, Evaluations-Mentor/Liaison	10 %
Math and Science Binder	10%
Lesson Plans/Projects/Presentations/Class Work	30%
Final Comprehensive Examination: TExES	10%
Thematic Unit Project	40%

### **Professionalism:**

You are preparing to enter a profession in which independent responsibility and professional behavior are expected at all times. Therefore, the same high standards of responsibility, behavior, and performance in this class are expected.

## TECHNOLOGY REQUIREMENTS

Access to the Internet  
Access to an Email Account  
Access to University Library Site Word Processor (Microsoft Word)  
Presentation Software (PowerPoint)  
USB Flash Drive (For Use at Home and University) Data  
Projector (Provided by University)

## COMMUNICATION AND SUPPORT

### Interaction with Instructor Statement:

In addition to the information listed on page 1 of this syllabus, I may be contacted using **my cell phone (text): 903-880-3864.**

## COURSE AND UNIVERSITY PROCEDURES/POLICIES

### University Specific Procedures:

#### Attendance

It is the prerogative of the instructor to drop students from courses in which they have accrued excessive absences (three or more). However, a student wishing to drop the course should do so. Failure to do so may result in a failing grade.

#### Academic Honesty Policy

Texas A&M University-Commerce does not tolerate **plagiarism** and other forms of academic **dishonesty**. Conduct that violates generally accepted standards of academic honesty is defined as academic dishonesty. "Academic dishonesty" includes, but is not limited to, plagiarism (the appropriation or stealing of the ideas or words of another and passing them off as one's own), cheating on exams or other course assignments, collusion (the unauthorized collaboration with others in preparing course assignments), and abuse (destruction, defacing, or removal) of resource material.

Disciplinary action for these offenses may include any combination of the following:

1. Point deduction on an assignment.
2. Failure for an assignment.
3. A grade of zero for an assignment.
4. Failure for the course.
5. Referral to the Academic Integrity Committee or department head for further action.
6. Referral to the Dean of the College of Education and Human Services, Business and Technology, Arts and Sciences, or Graduate School as appropriate.
7. Referral to the University Discipline Committee.
8. Communication of student's behavior to the Teacher Certification Office and/or Dean of the College of Education as constituting a reason to bar student from entering into or continuing in a teacher certification program. Procedures, A 13.04, 13.12, 13.31, and 13.32

## **ADA Statement**

The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you have a disability requiring an accommodation, please contact:

**Office of Student Disability Resources and Services**  
**Texas A&M University-Commerce**  
**Gee Library 132**  
**Phone (903) 886-5150 or (903) 886-5835**  
**Fax (903) 468-8148**  
[StudentDisabilityServices@tamuc.edu](mailto:StudentDisabilityServices@tamuc.edu)  
Student Disability Resources & Services

## **Disclaimer:**

The instructor reserves the right to make changes to the schedule of the class. Any alterations will be announced by the instructor in class or via email. Students who do not attend class, or check their email assume full responsibility for missing changes to the course.

<b>COURSE OUTLINE / CALENDAR</b>
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<b>Dates</b>	<b>Content</b>	<b>Assignments Due</b>
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TBA