



MLED 435.71E: Integrated Learning- Math, Science & Technology in

Field-Based Settings

COURSE SYLLABUS: Fall 2014

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

Email: Tammy.Schwartz@tamuc.edu **Cell Number:** 903-880-3864

Office Location: Texas A&M Commerce- Navarro Campus Room 230

Office Hours: Monday and Tuesday, 3-5 or by appointment

Office Main Number: 903-875-7617 **Fax Number:** 903-872-2019

COURSE INFORMATION

Room # 232

Required materials:

1. (1) 2" inch binder and (2 pkg.) 8 count dividers
2. Edmodo.com account and gmail account
3. TExES Preparation: Science 4-8 (116) and Mathematics 4-8 (115) at:
<http://cms.texas-ets.org/texas/prepmaterials/texas-preparation-manuals/>
4. National Science Teachers Association: Science Standards
<http://www.nsta.org/about/standardsupdate/>
5. National Science Standards at:
http://www.education.ne.gov/science/Documents/National_Science_Standardspdf.pdf,
6. National Council of Teachers of Mathematics: Math Standards and Expectations at:
<http://www.nctm.org/standards/content.aspx?id=4294967312>,
7. Texas Essential Knowledge and Skills for Science: Subchapter B. Middle School at: <http://ritter.tea.state.tx.us/rules/tac/chapter112/ch112b.html>,
8. Texas Essential Knowledge and Skills for Mathematics: Subchapter B. Middle School at:
<http://ritter.tea.state.tx.us/rules/tac/chapter111/ch111b.html>, and
9. Proposed revisions to the mathematics TEKS at:
<http://www.tea.state.tx.us/index2.aspx?id=2147499971>

Other resources:

<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 middle level 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 4-8; and the integration of technology in mathematics and science instruction grades 4-8.

Course Objectives:

Objectives are from the Domains in the TEXES Preparation Manual - Science 4-8 and the TEXES Preparation Manual - Mathematics 4-8 at:
<http://cms.texas-ets.org/texas/prepmaterials/texas-preparation-manuals/>

The Standards for Science 4-8:

Domain I, Scientific Inquiry and Processes

Standard I. The science teacher manages classroom, field and laboratory activities to ensure the safety of all students and the ethical care and treatment of organisms and specimens.

Standard II. The science teacher understands the correct use of tools, materials, equipment and technologies.

Standard III. The science teacher understands the process of scientific inquiry and its role in science instruction.

Standard VI. The science teacher understands history and nature of science.

Standard VII. The science teacher understands how science affects the daily lives of students and how science interacts with and influences personal and societal decisions.

Standard XI. The science teacher knows unifying concepts and processes that are common to all sciences.

Domain II, Physical Science

Standard VIII. The science teacher knows and understands the science content appropriate to teach the statewide curriculum (Texas Essential Knowledge and Skills (TEKS)) in physical science.

Domain III, Life Science

Standard IX. The science teacher knows and understands the science content appropriate to teach the statewide curriculum (Texas Essential Knowledge and Skills (TEKS)) in life science.

Domain IV, Earth and Space Science

Standard X. The science teacher knows and understands the science content appropriate to teach the statewide curriculum (Texas Essential Knowledge and Skills (TEKS)) in Earth and space science.

Domain V, Science Learning, Instruction and Assessment

Standard III. The science teacher understands the process of scientific inquiry and its role in science instruction.

Standard IV. The science teacher has theoretical and practical knowledge about teaching science and about how students learn science.

Standard V. The science teacher knows the varied and appropriate assessments and assessment practices to monitor science learning.

The Standards for Mathematics 4-8:

Domain I, Standard I. Number Concepts: The mathematics teacher understands and uses numbers, number systems and their structure, operations and algorithms, quantitative reasoning, and technology appropriate to teach the statewide curriculum (Texas Essential Knowledge and Skills (TEKS)) in order to prepare students to use mathematics.

Domain II, Standard II. Patterns and Algebra: The mathematics teacher understands and uses patterns, relations, functions, algebraic reasoning, analysis, and technology appropriate to teach the statewide curriculum (Texas Essential Knowledge and Skills (TEKS)) in order to prepare students to use mathematics.

Domain III, Standard III. Geometry and Measurement: The mathematics teacher understands and uses geometry, spatial reasoning, measurement concepts and principles, and technology appropriate to teach the statewide curriculum (Texas Essential Knowledge and Skills (TEKS)) in order to prepare students to use mathematics.

Standard IV. Probability and Statistics: The mathematics teacher understands and uses probability and statistics, their applications, and technology appropriate to teach the statewide curriculum (TEKS) in order to prepare students to use mathematics.

Domain V, Standard V. Mathematical Processes: The mathematics teacher understands and uses mathematical processes to reason mathematically, to solve mathematical problems, to make mathematical connections within and outside of mathematics, and to communicate mathematically.

Standard VI. Mathematical Perspectives: The mathematics teacher understands the historical development of mathematical ideas, the interrelationship between society and mathematics, the structure of mathematics, and the evolving nature of mathematics and mathematical knowledge.

Domain VI, Standard VII. Mathematical Learning and Instruction: The mathematics teacher understands how children learn and develop mathematical skills, procedures, and concepts, knows typical errors students make, and uses this knowledge to plan, organize, and implement instruction; to meet curriculum goals, and to teach all students to understand and use mathematics.

Standard VIII. Mathematical Assessment: The mathematics teacher understands assessment and uses a variety of formal and informal assessment techniques appropriate to the learner on ongoing basis to monitor and guide instruction and to evaluate and report student progress.

COURSE REQUIREMENTS

Grading: MLED 435: STEM: Attendance and Participation is required (please email or text the instructor if you will be out)

Attendance/Participation	20 %
Math and Science Binder	10%
Lesson Plans/Projects	30%
Presentations/Class Work	20%
Final Comprehensive Examination: TExES	20%

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@tamu-commerce.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.

COURSE OUTLINE / CALENDAR

Dates	Content	Assignments Due
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TBA