MLED 435.01E Integrating Instruction: Science, Mathematics and Technology

COURSE SYLLABUS: FALL 2015

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COURSE INFORMATION

Materials – Textbooks, Readings, Supplementary Readings:

Textbook(s) Required: None; readings will be assigned from online sources, handouts, etc.

Course Description: The course will focus on: how middle level children learn and develop knowledge and skills in mathematics and science; varied instructional & assessment strategies that require high expectations and worthwhile opportunities for all students; Texas Essential Knowledge & 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. Prerequisites: ELED 300 or MLED 401, all sections of TASP passed. This is a three-hour credit course.

Student Learning Outcomes:

1. The students will be able to design effective and coherent mathematics and science instruction and assessment based on appropriate learning goals and objectives.
2. The students will understand how children develop knowledge in mathematics and science.
3. The students will provide appropriate instruction in mathematics and science that actively engages all students in the learning process.
4. The students will incorporate the effective use of technology in mathematics and science instruction and as a professional tool.
5. The students will monitor student performance and achievement; provide students with timely, high-quality feedback; and respond flexibly to promote learning for all students.

4-8 Pedagogy and Professional Responsibilities Competencies Aligned with MLED 435

Competency 003  
The teacher understands procedures for designing effective and coherent instruction and assessment based on appropriate learning goals and objectives.

Competency 008  
The teacher provides appropriate instruction that actively engages students in the learning process.

Competency 009  
The teacher incorporates the effective use of technology to plan, organize, deliver, and evaluate instruction for all students.
4-8 Mathematics and Science Competencies Aligned with MLED 435: Mathematics

Competency 017
The teacher understands how children learn and develop mathematical skills, procedures, and concepts

Competency 018
The teacher understands how to plan, organize, and implement instruction using knowledge of students, subject matter, and TEKS to teach all students to use mathematics

Competency 019
The teacher understands assessment and uses a variety of formal and informal assessment techniques to monitor and guide mathematics instruction and to evaluate student progress

4-8 Mathematics and Science Competencies Aligned with MLED 435: Science

Competency 021
The teacher has theoretical and practical knowledge about teaching science and about how students learn science

Competency 022
The teacher understands the process of scientific inquiry and its role in science instruction

Competency 023
The teacher knows the varied and appropriate assessments and assessment practices to monitor science learning in laboratory, field, and classroom settings.

COURSE REQUIREMENTS

Evaluation Procedures:
1. Attendance. Much of the work in this course is accomplished in collaborative work groups. Punctuality, dependability, and the ability to accomplish group goals are ways to demonstrate the professionalism required for success in a field-based teacher education program.
2. Field Requirements; mentor teacher and liaison input.
3. Teaching rationale/philosophy
4. In-class & field assignments determined through ongoing needs.
5. A “Professional Portfolio”.

Grading
Grades will be determined by a combination of:
Mentor teachers’ and liaison judgments about the effectiveness of the student's classroom lesson plans and instruction as implemented.
Self reflection and liaison judgments about their student’s intellectual involvement and engagement during lessons.
Self, peers' and mentor's and liaison judgments about the impact of technology applications.
Professional portfolio

Special note:
This is a field-based course. Be sure that you are documenting throughout your portfolio your efforts to teach mathematics and or science and integrate appropriate technology in various activities/lessons. Input from your mentor teachers and liaison will be considered in determining the final grade for the course. Keep the following descriptors in mind:

Grade/descriptor: A = exceptional  B = commendable  C = developing  D = minimal  
F = unsatisfactory
This course will be utilizing eCollege to enhance the learning experience. eCollege is the Learning Management System used by Texas A&M University-Commerce. To access the course, go to: https://leo.tamu-commerce.edu/login.aspx. You will need your CWID and password to log in to the course. If you do not know your CWID or have forgotten your password, contact Technology Services at 903.468.6000 or helpdesk@tamuc.commerce.edu.

**ACCESS AND NAVIGATION**

**COMMUNICATION AND SUPPORT**

Texas A&M University provides students technical support in the use of eCollege. The student help desk may be reached by the following means 24 hours a day, seven days a week. If you experience issues while taking your exams or at any other point, feel free to contact the support desk.

- **Chat Support:** Click on 'Live Support' on the tool bar within your course to chat with an eCollege Representative.
- **Phone:** 1-866-656-5511 (Toll Free) to speak with a Representative.
- **Email:** helpdesk@online.tamuc.org to initiate a support request with eCollege Technical Support Representative.
- **Help:** Click on the 'Help' button on the toolbar for information regarding working with eCollege (i.e. How to submit to dropbox, How to post to discussions etc...).

Interaction with Instructor Statement:
The instructor is available before and after class and other posted office hours. The preferred method of communication is via university email.

**COURSE AND UNIVERSITY PROCEDURES/POLICIES**

Course Specific Procedures:
This is a field-based course with participation in a university determined public school placement. In addition to course requirements field requirements will be determined by school mentor and university liaison. Field assignments will emerge based on individual placements and student needs.

University Specific Procedures:

*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.commerce.edu
Student Disability Resources & Services
Student Conduct

All students enrolled at the University shall follow the tenets of common decency and acceptable behavior conducive to a positive learning environment. (See Code of Student Conduct from Student Guide Handbook).

**TENTATIVE COURSE OUTLINE / CALENDAR**

Seminar 1 – Orientation to internship; roles & expectations

Seminar 2 – Discussion of first weeks in school; sharing of major field events

Seminar 3 – Effective teaching practices for all students

Seminar 4 – Mid-term expectations; using simulations

Seminar 5 – Math & Science teaching resources

Seminar 6 – Discussion of mentor switch

Seminar 7 – Web-based technology

Seminar 8 – Effective management of materials

Seminar 9 – Final field evaluation process

Seminar 10 – Making the transition to residency/teaching career