

Muskingum University
Office of Graduate and Continuing Studies
Course Syllabus

Continuing Studies Course Title:	STEM in the Sticks: Engaging Rural Students in Science Education
Dates:	August 4 – 22, 2014
Location:	Online – www.thefrederickcenter.com
Credit Hours:	1 graduate semester hour (three-week course, online)
Participants:	Educators, counselors, social workers
Instructor of Record:	Cory Frederick, M.Ed.
Contact:	cory@thefrederickcenter.com 740-517-6997

The Frederick Center of Professional Development Conceptual Core - The Frederick Center (TFC) was founded in order to address issues of social equality and social justice by delivering courses and imparting knowledge, tools, and resources to people in the ‘helping professions’. Through education, together, we can change the world.

Professional Standards:

NCATE Diversity Standard #4d

- “... all teacher candidates must develop proficiencies for working effectively with students and families from diverse populations and with exceptionalities to ensure that all students learn”
- Teachers and teacher candidates must “...understand the potential impact of discrimination based on race, class, gender, disability, sexual orientation, and language on students and their learning”

Ohio Department of Education – Standard Four - High Quality Professional Development (HQPD)

- 4.1 Professional learning opportunities are based on identified needs.
- 4.2 Professional development includes a variety of learning experiences.

Learning Outcomes:

Students attending schools in rural communities often face challenges when it comes accessing adequate, experiential STEM (science, technology, engineering, mathematics) education. Economic hardships, school funding, parental involvement/resources, and teacher preparedness are factors that contribute to the growing STEM achievement gap between affluent urban communities and underserved rural communities. This course will examine the cultural expectations, risk factors, and best practices to engage rural students in the rapidly growing STEM education and industry.

Objectives:

- Define STEM education as it relates to Race to the Top and Common Core standards
- Identify 3 important situations that many rural students experience
- Analyze contributing environmental and educational factors affecting student performance
- Design strategies to provide rural students with experiential STEM education

Assessment of Learning Outcomes:

Grading Scale for Course	93-100 A	83-87 B
	90-92 A-	80-82 B-
	88-89 B+	

Graduates

Q&As	25 pts.
Graduate Project	25 pts.
Final Exam	<u>+50 pts.</u>
	100 pts.

Course Policies:

The Frederick Center

To access this online course, please follow these steps:

1. Go to www.TheFrederickCenter.com.
2. Click the **COURSES** button at the top right on the home page.
3. Scroll down until you find the name of your course. Click on it.
4. On the course overview page, click **BEGIN**.
5. On the page that opens next, click the name of your institution. If you are new to The Frederick Center, you will need to **REGISTER**, otherwise, **SIGN-IN** to access all the course materials.
6. On the course page that opens next, you will access the syllabus, lectures, graduate project, final exam, and my contact information. When you are ready to begin, click **MY COURSE LECTURES**. You will be directed to our online learning platform at Udemy.com.
7. If you are new to Udemy, create an account using the same name and email address you used in step 5 when you registered for The Frederick Center website. You will now be able to view all the lectures and course materials at The Frederick Center and Udemy.

Communication

The fastest way to contact me is via text or phone: 740-517-6997 (Mon. – Fri. 5 PM – 9PM EST). You can also reach me at cory@thefrederickcenter.com. Please be sure to state your name and the course name in the body of your email, so I can quickly and easily identify your needs.

Course Materials

Materials, lectures, and additional resources will be posted on the course website. Several assignments require viewing films that will help to conceptualize the information. The required films are available online (links provided), and may also be found at your local library, video rental store, or DVD kiosk. *Please remember that it is your responsibility to locate and view these films. Don't wait until the last minute to search for them. If the provided link doesn't work for you, you may need to Google the film title, and/or search for clips on YouTube, or similar sites.*

Course Requirements

Assignments are MANDATORY and must be submitted as stated. All the course materials, lectures, and exams are available on The Frederick Center website, www.TheFrederickCenter.com.

Participation (25 pts.)

The Questions Tab is a tool on our learning platform that will allow us to ask and answer questions about the course material. Your questions and answers should reflect your own feelings, thoughts, etc., and this is also a chance for you to interact with your classmates. Questions and answers posted are visible to each student who registers for the course, so please keep your posts professional.

Graduate Project – Experiential STEM Education (25 pts.)

Write a paper reflecting on the importance of providing quality, hands-on STEM education to students in rural, amenity-decline and chronically poor communities. In your paper, describe how you would convert theory into practical, classroom application. Points to consider: economic challenges for the students, parents, and educators, access to hands-on resources, geographic isolation and the role of industry (especially as tax-revenue & partnerships), etc. Cite at least five references (parenthetical is okay); only two may be from this course.

NOTE: You will use the form on the course page (listed under “Project”) to submit your paper.

Final Exam (50 pts.)

The final exam has multiple-choice and true/false questions. It is comprehensive and covers the lectures, articles, films, and videos. You may use your notes, however collaborating with other is considered cheating. Do not attempt to close and reopen the exam; only the first submission will be graded. If your Internet connection is poor, you should find a library, or other suitable location to take the exam. Please contact technical support at support@thefrederickcenter.com.

Attendance

This is an online course, and you are responsible for accessing and completing assignments by the specified due date.

Dishonesty:

Plagiarism, cheating, and other forms of academic dishonesty are serious offenses, and the faculty member has the prerogative of invoking the most severe penalty for the initial offense. Insofar as a first offense is concerned, the minimum penalty for academic dishonesty is a failing grade on the paper or examination; a second offense may result in a failing grade in the course. The student found responsible a second time may also be suspended or expelled from the graduate program. In either case, the faculty member should submit a written report of the offense to the Program Director, the Dean of Graduate Studies, and the Office of the VPAA; and the incident will be recorded in the student’s file. Academic dishonesty is considered evidence of lack of moral character, and may be grounds for denying recommendation for licensure in education programs.

Late Submissions/Requirements Not Met

Assignments submitted after the posted due date will not be graded. If an assignment cannot be submitted due to a technical problem, you MUST notify me *prior to the due date*. “Incomplete” (I) grades will only be recorded in special circumstances.

Intellectual Copyright Policy

The lectures, online activities and all materials associated with this class and developed by the instructor are copyrighted in the name of Cory Frederick on July 4, 2012 unless otherwise stated.

Special Accommodations

In compliance with the Americans with Disabilities Act (ADA), all students are entitled to “reasonable academic accommodations.” If you are a student with special needs, please notify me at the beginning of this class.

Modifications

This syllabus may be modified as required.

Agenda

Week 1 – What is STEM education and why is it important? This week, we will define STEM education and its relationship to Race to the Top and Common Core standards.

1. View Section 1 (Lecture 1 & 2) and introduce yourself by answering the questions posted in the Q&A tab by the end of week one.
2. View Section 2 (Lecture 3). Post your Q&A for the lecture by the end of week one.

Week 2 – The rural experience. In week two, we will examine the characteristics of rural communities and the 4 common types: amenity-rich, amenity-transition, declining resource-dependent, and chronically poor. We'll also qualify important situations that many rural students experience including economic hardships, parental involvement, and cultural expectations.

1. View Section 3 (Lectures 4 & 5). Post your Q&A for each of the lectures by the end of week two.

Week 3 – Providing rural students with experiential STEM education In our final week, we will evaluate resources commonly available in rural communities and we will design strategies to provide rural students with experiential STEM education.

1. View Section 4 (Lecture 6). Post your Q&A for each of the lectures by the end of week three.
2. View Section 5 (Lectures 7 - 9). Post your brief reflection in the QUESTIONS tab by the end of week three. Include information about what you learned from this course and how you might use the information in the future.
3. Take the **FINAL EXAM**, which is located on the course page by the end of week three.
4. Submit your **GRADUATE PROJECT** on the course page by the end of week three.