



Zucker Family School of Education

EDUC 680-W1 – Foundations in STEM II

<u>Faculty:</u> Kathryn Richardson Jones, Ed.D.	<u>Email:</u> kathryn.jones@citadel.edu
<u>Office:</u> Capers Hall room 321	<u>Class Meetings:</u> On-line
<u>Telephone:</u> (843) 953-3163	<u>Office Hours:</u> Available by e-mail and by appointment
<u>Credit Hours:</u> 2	

PREREQUISITES: This is a capstone course for the STEM M.Ed. Program. Candidates should be in their last one or two semesters before taking this course.

REQUIRED: LiveText® subscription

READINGS AND VIDEOS: Available on-line. See weekly topic assignments for information and hyperlinks.

Note: If you should encounter a computing issue, The Citadel's Information Technology Service may be able to help. Their web page includes computer recommendations as well as help center contact information:

<http://www.citadel.edu/root/its>

SUPPLEMENTARY SUGGESTED READING: (see recent special issues related to the topics below)

- International Society for Technology Education (ISTE) National Education Technology Standards (NETS) for Students, Teachers, and Administrators. Available: www.iste.org
- National Council of Teachers of Mathematics. Available: www.nctm.org
- National Science Teachers Association. Available: www.nsta.org
- South Carolina Science and Engineering Practices Curriculum Standards. Available: <http://ed.sc.gov/agency/ccr/Standards-Learning/ScienceandEngineeringPractices.cfm>
- South Carolina Career Ready Standards for Mathematics. Available: <http://www.ed.sc.gov/agency/ccr/Standards-Learning/documents/SCCCRStandardsforMathematicsFinal-PrintonOneSide.pdf>

STUDENT INFORMATION:

This course is designed for STEM Educators. If you should encounter a computing issue, The Citadel's Information Technology Service may be able to help. Their web page includes computer recommendations as well as help center contact information: <http://www.citadel.edu/root/its>

COURSE DESCRIPTION:

The Foundations in STEM courses refresh student content knowledge in the STEM disciplines in order to prepare students as they move forward in their careers. The Foundations in STEM II course is a follow up to the first course and has students continue exploration of the foundational concepts and applications of science, technology, engineering and math. Embedded in the coursework is completion of the capstone "Program Completion Portfolio." In preparation for this, students will prepare an online LiveText® portfolio that captures evidence of achievement. The Portfolio will consist of their developed project-based lessons, an analysis of lesson implementation, and statistical analysis of student impact. A panel of instructors will review student's work and evaluate their capstone project.

THE CITADEL'S SCHOOL OF EDUCATION'S CONCEPTUAL BASE

Developing Principled Educational Leaders for P-12 Schools

The Citadel's Professional Education Unit prepares principled educational leaders to be knowledgeable, reflective, and ethical professionals. Candidates completing our programs are committed to ensuring that all students succeed in a learner-centered environment.

The Citadel's Professional Education Unit is committed to the simultaneous transformation of the preparation of educational leaders and of the places where they work. Specifically, The Citadel's Professional Education Unit seeks to develop principled educational leaders who:

- have mastered their subject matter and are skilled in using it to foster student learning;
- know the self who educates (Parker J. Palmer) and integrate this self-knowledge with content knowledge, knowledge of students, and in the context of becoming professional change agents committed to using this knowledge and skill to ensure that all students succeed in a learner-centered environment; and
- exemplify the highest ethical standards by modeling respect for all human beings and valuing diversity as an essential component of an effective learner-centered environment.

The Citadel's Professional Educational Unit is on the march, transforming itself into a Center of Excellence for the preparation of principled educational leaders. Through our initial programs for teacher candidates for P-12 schools and our advanced programs for professional educators in P-20 schools, The Citadel's Professional Education Unit transforms cadets and graduate students into principled educational leaders capable of and committed to transforming our schools into learning communities where all children and youth succeed.

The Citadel's Professional Education Unit has identified 15 performance indicators for candidates to demonstrate that they are principled educational leaders who are knowledgeable, reflective, and ethical professionals:

Knowledgeable Principled Educational Leaders...

1. Have mastered the subject matter of their field of professional study and practice;
2. Utilize the knowledge gained from developmental and learning theories to establish and implement an educational program that is varied, creative, and nurturing;
3. Model instructional and leadership theories of best practice;
4. Integrate appropriate technology to enhance learning;
5. Demonstrate a commitment to lifelong learning;

Reflective Principled Educational Leaders...

6. Develop and describe their philosophy of education and reflect upon its impact in the teaching and learning environment;
7. Develop and manage meaningful educational experiences that address the needs of all learners with respect for their individual and cultural experiences;
8. Construct, foster, and maintain a learner-centered environment in which all learners contribute and are actively engaged;
9. Apply their understanding of both context and research to plan, structure, facilitate and monitor effective teaching and learning in the context of continual assessment;
10. Reexamine their practice by reflectively and critically asking questions and seeking answers;

Ethical Principled Educational Leaders...

11. Demonstrate commitment to a safe, supportive, learning environment;
12. Embrace and adhere to appropriate professional codes of ethics;
13. Value diversity and exhibit a caring, fair, and respectful attitude and respect toward all cultures;
14. Establish rapport with students, families, colleagues, and communities;
15. Meet obligations on time, dress professionally, and use language appropriately.

Course Goals with Relationship to the conceptual base:

(Related performance indicators are displayed in parenthesis)

Master of Science in STEM Education candidates who take this course will:

- review Curriculum Standards that apply to the STEM disciplines. (CF 1 &2)
- evaluate a variety of technologies, models, and visual representations that enhance retention of STEM content. (CF 1-4)
- identify and apply attributes of Interdisciplinary STEM practices (CF 1 &2)
- finalize a program completion portfolio that documents progression of growth throughout the Interdisciplinary STEM M.Ed. program. (CF 6-10, 11-15)

This portfolio should include:

- Introduction
- Philosophy of STEM Education
- Activities, Resources, and Assessment created throughout the degree program
- Narrative about adjustments to meet the needs of all learners
- Career connections that have been part of the program
- Reflective components that include the candidate's roles as teacher, mentor, and colleague
- Narrative about plans for transition from this program into leadership roles in their various work places.

CLASS EXPECTATIONS

This course is an online course. As you move through the course, you will discover that while there are content similarities, on-line instruction for this course is different from what you would experience in a traditional, face to face course. Please know that while the course is asynchronous in format and you will be working from different locations, interaction within the discussion boards is an essential part of the learning process for this course.

Class Attendance

Participation in asynchronous class discussions is expected each week with at least two responses to discussion posts made by others in the course.

Assignments

In this course, you will have readings and videos to view, discussions to participate in and projects to complete. You will be working on finalizing a program completion portfolio as you move through the course. Please remember that it will be your responsibility to keep up with the assignments. All assignments are to be turned in on time. Late assignments might not be accepted or assigned lower grades. ***See Assessment, Assignment Instructions, and Grading Rubrics information that are included in the "Weekly Discussion" section of the . Contact me at Kathryn.Jones@citadel.edu if you have concerns or need help completing the work.***

Disability Disclosure

If you need accommodations because of a disability, please inform us immediately. Please e-mail privately to let us know about your specific needs. If you need additional support as you move through this and other courses, The Citadel maintains an Office of Access Services, Instruction and Support (OASIS) located in room 105 Thompson Hall. To receive additional assistance, email Dr. Jane Warner – jane.warner@citadel.edu or call 953-1820 to set up an appointment. OASIS is responsible for reviewing documentation provided by students requesting academic accommodation and for accommodation in cooperation with students and instructors as needed and consistent with course requirements.



Honor Statement

Integrity is an expectation. Students of The School of Education at The Citadel are expected to meet the standards set forth in the Citadel Graduate School Catalog: "The Citadel has among its primary purposes teaching, research, and the expansion and dissemination of knowledge. Products of these endeavors include the development and use of intellectual property. It is the policy of the College that its faculty, staff, and students carry out their scholarly work in an open and free atmosphere that encourages publication and creation of such works without constraint but consistent with applicable laws and College policy. This policy will be in accord with the guidelines and criteria published in The American Association of University Professors' 'Statement of Copyright' (Policy Documents and Reports. Ninth Edition, 2001, or subsequent editions)."

ASSESSMENT

Grades for EDUCATION 546 are based on a variety of assignments. ***Specific information about each of these follows the Course Schedule.*** The relative weights used for calculating the course grade are as follows:

Assignment	Percent
Discussion Forum Posts and Replies	40%
Program Completion Portfolio	50%
Professionalism	10%

90.0-100.0=A, 85.0-89.9=B+, 80.0-84.5=B, 75.0-79.5=C+, 70.0-79.9=C, 0-69.9=F

Information about Discussion Posting (per The Citadel's On-line Faculty Academy)

Discussion Answer Postings: "This category reflects the quality of a student's answers that contribute in a meaningful way to producing a fruitful learning environment for all participants. The criteria for grading answers can vary based upon the nature of the question, but the following are helpful tips to use, as applicable, to particular questions:

1. Ensure that you answer the question(s) being asked, as well as all parts of the question. So, read the question carefully.
2. Explicitly cite relevant concepts.
3. Apply concepts to offer an in-depth explanation, i.e., state why your answer makes sense.
4. Cite examples from real life cases, your experience, or things you've read.
5. Compare and contrast varying views on an issue.

Discussion Replies: This category reflects the quality and quantity of a student's Replies to the answers that others have posted. In order to receive any credit, replies must be substantive and relevant to the corresponding answer. Effective replies offer some reflection upon the specific ideas in the answers posted by others. See items 1-5 in Discussion Answer Postings above for ideas when you're unsure how to reply to an answer. No credit will be given for replies that simply state things like the following: I agree, nice job, well done, and the like, i.e., if a particular reply could apply to any answer, anywhere, then it is inadequate. The reply should have information that relates to the particular answer to which it pertains. At least two Replies are required for each Discussion throughout the course, unless otherwise specified."

Everyone must participate in each discussion. Discussion replies are due within one week of each lesson's start date.

Assessments are in rubric form and will be included as appropriate in the discussion board.

Rubric for Discussion Forum Posts

CATEGORY	Meets Standards	Approaching Standards	Not Acceptable
Information	The entry demonstrates that the participant learned something new from the talk.	The entry includes basic information	There are no specific descriptions.
Personal Application Position	A specific position with personal applications is included.	A position is included but includes no personal applications.	No personal application is included

Rubric modified by Dr. Kathryn Richardson Jones

