

Syllabus – EDL 647.001 and 647.800
 STEM Leadership in Schools and Districts
 Tuesdays 6:00 PM – 8:30 PM (Hybrid Delivery)
 3 Graduate Credits Hours
 May 20th thru July 22nd
 Summer School Calendar: <http://uncw.edu/summsch/>

INSTRUCTOR

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SUPPORT INSTRUCTOR

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COURSE DESCRIPTION

This course examines the area of Science, Technology, Engineering, and Mathematics (STEM) that relates to curriculum development, instruction practice and leadership integration in schools and districts. Leadership involves knowledge of the curriculum, resource allocation, sustainability and dissemination, and taking action to be an agent of change in a community.

REQUIRED TEXT AND READINGS

1. Sheninger, E. & Devereaux, K. (2013). *What principals need to know about teaching and learning science* (2nd ed). Bloomington, IN: Solution Tree.
 - Available online via [Amazon](#) or other outlets.
 - Consider purchasing the e-book.

2. Bybee, R.W. (2013). *The Case for STEM Education: Challenges and Opportunities*. NSTA Press: Arlington, VA
 - Available online via [Amazon](#) or other outlets.
 - Consider purchasing the e-book.

Other readings as assigned will be made available in Blackboard.

RELATION OF THE COURSE TO UNCW LEARNING GOALS

This course meets UNCW Learning Goals of:

1. **Foundational Knowledge** - Students will acquire foundational knowledge, theories and perspectives in a variety of disciplines through active reading and reflection.
2. **Inquiry** - Students will engage in rigorous, open-minded and imaginative inquiry via classroom discussions, activities, and assignments.
3. **Information Literacy** - Students will locate, evaluate, and effectively use information by applying a variety of academic and technological skills to completing assignments.
4. **Thoughtful Expression** - Students will express meaningful ideas in speech in conversations with STEM experts in the state and in writing to complete assignments.
5. **Global Citizenship** - Students will describe and examine the intellectual and ethical responsibilities of active global citizenship and take action to incorporate STEM opportunities in the local educational settings.

RELATION OF THE COURSE TO THE WATSON COLLEGE OF EDUCATION CONCEPTUAL FRAMEWORK

This course is designed to help students understand how STEM education and literacy can improve student achievement and connect formal educational objectives with informal and external development of resources. The key concepts are:

1. Informed data driven decision making;
2. Knowledgeable in academic content and pedagogy; and
3. Knowledge and use of appropriate communication strategies.

COURSE OBJECTIVES AND OUTCOMES

Students will be able to:

1. Discuss philosophical and historical perspectives of STEM that shaped contemporary higher education.
 - See Module 1
2. Demonstrate understanding of STEM concepts as an interconnected discipline and recognize the interdisciplinary nature of teaching and learning STEM.
 - See Modules 1, 2 and 3

3. Understand how STEM education prepares students for a rapidly-changing global occupational and educational environment.
 - See Module 2
4. Identify various external funding resources that can bolster STEM education, along with acquisition of materials and resources and implementation of resources into student learning.
 - See Module 3

INSTRUCTIONAL METHODS AND ACTIVITIES

Students will engage with authentic STEM learning experiences applicable to current trends and realities of educational leadership today. Site visits to formal learning centers supported by STEM initiatives, class debates, and inquiry-based learning experiences will compliment recommended readings and modules.

COURSE OUTLINE

All course handouts and materials will be ‘housed’ in **BlackBoard Learn (Bb Learn)**. Please refer to the class calendar and schedule for specific meeting days, times, and locations. The class is divided into three learning modules over the course of the ‘full’ 10-week summer semester. Each module will have an assessment to be completed and submitted prior to beginning the next Module (see Evaluation below).

- Module 1 – STEM Leadership
- Module 2 – STEM Organizations and Competitions
- Module 3 – STEM Grant and Foundation Funding

Each module is divided into specific classes that support the topic of exploration. For instance, the three classes supporting ‘Module 1 - STEM Leadership’ are the following:

- Class 1 – Overview of STEM as a discipline of study
- Class 2 – National Perspectives and Policy
- Class 3 – North Carolina Perspectives and Policy

Each specific class will have handouts, PowerPoint presentations, and/or asynchronous discussion posts to be completed PRIOR to the next class. There are a total of ten overall classes for the summer semester. We will meet **face-to-face** for three of those classes and **online** for the other seven. Students will be asked to engage in discussions with our guest speakers and collaborate with their peers both in class and online for the purpose of advancing intellectual discourse.

This STEM Leadership in Schools and Districts course is designed only for self-motivated students. Each student is expected to take initiative with each lesson, each activity and each assignment. All students are required to take ownership for their own learning. There are rubrics designed and posted to assess student submissions. Please refer to them for guidance as needed.

We will meet face-to-face for the final exam.

ATTENDANCE AND PARTICIPATION

Active participation and promptness with work are expected for all class sessions, assignments, and discussions. Students are expected to be active participants in this class—that is, to complete all reading, writing and activity assignments. Each anticipated absence must be discussed with the instructor in advance. Each unanticipated absence must be discussed with the instructor immediately upon return to class. In the case of excessive absences, your grade may be lowered at the discretion of the instructor.

Attendance is required for all face-to-face session. If attendance is an issue, please contact the instructor.

In the case of an absence, it is the student's responsibility to find out what work was missed, and to make work up on his or her own time. I recommend finding a "study buddy" that would be willing to share with you all vital information.

1. Students are **not** to be **late for class**. Class time will begin promptly - 6:00 PM; ending by 8:30 PM (check schedule for locations for some class sessions).
2. **Complete** all assignments as detailed in the requirements section. Any assignment submitted after the due date may result in a major (30%) grade deduction unless there is a documented emergency. It is the student's responsibility to make sure all assignments are submitted on time! NO assignments will be accepted later than one week after the due date unless there is a documented emergency. Being absent from class the day an assignment is due is NO excuse for not turning in the assignment. If there is an illness or emergency, be sure to contact the instructor prior to missing class and arrange to have any assignment submitted prior to the missed class.
3. **Adhere** strictly to the UNCW Honor Code (See Student Handbook, Code of Student Life) <http://uncw.edu/odos/honorcode/>.
4. **Avoid Plagiarism!** Visit the University Learning Center: Writing Services or go to http://library.uncw.edu/guides/plagiarism_student_guide.

EVALUATION AND GRADE ASSIGNMENT

Students will be evaluated on a 10-point scale.

(A: 200-180; B: 179-160; C: 159-140; D: 139-120; F: 119-0).

All assignments will be given a point value.

Point system: Each of the three assignments will be comprised of 50 points (150 points). Asynchronous Responses to questions and cases will be worth 25 points total and the final exam will be worth 25 points for a total of 200 points.

Assignment	Topic	Point Value	Due Date
Assignment 1	Leadership Paper and Presentation	50	6/10
Assignment 2	STEM Activity/Competition Report and Presentation	50	7/1
Assignment 3	Grant Writing Artifact and Presentation	50	7/22
Online Asynchronous Responses	BlackBoard	25	Ongoing
Final Exam		25	7/24

SPECIAL CONSIDERATIONS

If you are a person with a disability and anticipate needing accommodations of any type in order to participate in this class, please notify Disability Services (Depaolo Hall, 910-962-7555), provide the necessary documentation of the disability and arrange for the appropriate authorized accommodations. Please identify yourself to me so that I can implement these accommodations.

UNIVERSITY MISSION STATEMENT

The University of North Carolina Wilmington is a public comprehensive university dedicated to excellence in teaching, scholarship and artistic achievement, and service. Through the College of Arts and Sciences, the professional schools, and the graduate school, the university seeks to stimulate intellectual curiosity, imagination, rational thinking, and thoughtful expression in a broad range of disciplines and professional fields. Of prime importance is the university's commitment to undergraduate teaching. The humanities, the arts, the natural and mathematical sciences, and the behavioral and social sciences comprise the core of the undergraduate curriculum. Strong graduate programs complement the undergraduate curriculum. The university considers scholarly practice, research, and creative activities essential for effective learning.

UNCW practices a zero-tolerance policy for violence and harassment of any kind. For emergencies contact UNCW CARE at 962-2273, Campus Police at 962-3184, or Wilmington Police at 911. For University or community resources visit <http://www.uncw.edu/care/>.