INTR-D 170: Step 1 - Inquiry Approaches to Teaching Syllabus - Fall 2025

Class Times: Tuesdays, 2:00 ï 2:50pm OR Wednesdays, 11:00 ï 11:50am
Classroom: UTeach Room, W4-167

Instructor: Karen M. Crounse, Phd
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Office Hours: T 12:00 ï 2:00pm
(or by appointment, in person or on Zoom, just ask!)

Course Overview

This course is an introduction to teaching science, technology, engineering and mathematics (STEM). Through activities, readings and discussions, students develop an understanding of best practices in STEM teaching and practice strategies that help people learn. Along with the weekly in-class meeting, students apply what they learn in field work, observing and teaching in a Boston elementary school STEM class. This course is for any student interested in understanding how people learn math and science, and additionally serves as the introductory course to the UTeach STEM education minor. The goals for the course are that students will be able to:

1. Describe the inquiry-based lesson model, along with its advantages and challenges.
2. Develop proficiency with instructional strategies that increase student understanding.
3. Apply ideas from the course in field work, observing and teaching in an elementary school classroom.

Class Community

In our classroom, diversity and individual differences are respected, appreciated and recognized as a source of strength. Each student in this class is vital to the success of the classroom community, which is why it is important that we all respect each other, carefully consider one anotherôs ideas and value each otherôs contributions. Hate, racism, sexism and other forms of discrimination (implicit or explicit) have no place in this community and will not be tolerated. As your instructor, I will do my best to foster a culture of equity and justice. By joining this classroom community, you are committing to sharing your voice, ideas, and fully participating in class to improve understanding for all.

Rights of the Learner:
As a student in this class, you have the right:

1. To be confused and ask questions,
2. To make mistakes and revise your thinking,
3. To speak, listen and be heard, and
4. To enjoy learning.

Fieldwork

You will be assigned to work on a team of 2-3 students for your fieldwork in a Boston school. All team members are required to be present and participate in all lessons. In some cases, observations can be rescheduled on an individual basis, provided the classroom teacher is able to accommodate the change.

Teachers have incredibly hectic schedules, and we are grateful to them for sharing their students with us. Fieldwork schedules will be set at the beginning of the semester based on the teacher and student UMass Boston schedules. This will allow time for students to preserve the dates in their calendars.

Written Assignments

Pre-Class Reading, Attendance and Class Assignments
Readings provide background information on STEM pedagogy and instructional practices. For these assignments, youôll be asked to read an article and respond to short discussion questions before the class discussion These assignments are important to make sure that you are prepared to participate in class and engage with other students in a productive way. Prev-Class reading responses will be mainly graded on effort. Note: To earn credit for a Pre-Class assignment, it must be submitted before class time. (Goals #1 and #2)

Class assignments include summaries and reflections on class activities.

Field Work Reflections
After every field experience, whether observing or teaching, you will reflect on the experience in a short paper. Specific prompts will be given to help you connect your experience to the course content. There will be three observations and two lessons. (Goal #3)

Lesson Plans
Each team will be teaching the same lesson to their students to allow us to try it in class and debrief. A template of each lesson will be provided for each team to modify based on their students and class environment. (Goal #3)

Grading Policy

Grades will be calculated according to the following weights:

Assignment Type	Percentage
Pre-Class Readings, Attendance and Class Activities	30
Field Work Reflections	30
Lesson Plans	40

Syllabus

Week	Class Activities	Field Work/Assignments Due
1: 9/02 or 9/03	Á Welcome and Introductions Á Reflection on Best Learning Experiences	
2: 9/09 or 9/10	Á Syllabus Review Á Models of STEM Pedagogy and Inquiry-Based Learning Á Fieldwork Paperwork	Pre-Class Reading: Inquiry-Based Learning

Week	Class Activities	Field Work/Assignments Due
3: 9/16 or 9/17	Instructional Strategy: Questioning	Pre-Class Reading: Questioning
4: 9/23 or 9/24	Á Instructional Strategy: Practice with Questioning Á Giving Clear Instructions	
5: 9/30 or 10/01	In-Class Lesson #1	**Observation #1** Pre-Class Reading ï 5Eôs
6: 10/07 or 10/08	Á Debrief Lesson #1 Á Team Lesson Planning	Observation #1 Reflection due Draft Team Lesson Plan #1 due
7: 10/14 or 10/15	Teach #1 Practice	**Teach #1**
8: 10/21 or 10/22	Reflection on Teaching Lesson #1	Teach #1 Reflection due
9: 10/28 or 10/29	Discussion ï ñWarning Signsò	Pre-Class Reading: Warning Signs **Observation #2**
10: 11/04 or 11/05	In-Class Lesson #2	Reflection on Observation #2 due
11: 11/12	Wednesday Class Only: Á Debrief Lesson #2 Á Lesson #2 Planning	Team Lesson Plan #2 due **Observation #3**
12: 11/18 or 11/19	Tuesday Class: Á Debrief Lesson #2 Á Lesson #2 Planning Wednesday Class: Practice Teach Lesson #2	Observation #3 Reflection due
13: 11/25	Tuesday Class Only: Practice Teach Lesson #2	
14: 12/02 or 12/03	Equity in STEM Teaching	Reading: Equity in STEM Teaching **Teach #2**
15: 12/09 or 12/10	Course Wrap Up	Teach #2 Reflection due

Accommodations

Sections 504 and the Americans with Disabilities Act of 1990 offer guidelines for curriculum modifications and adaptations for students with documented disabilities. If applicable, students may obtain adaptation recommendations from the Ross Center (287-7430). The student must present these recommendations to each professor within a reasonable period, preferably by the end of the Drop/Add period. If you have a disability that may have some impact on your work in this class and for which you may require accommodations, please contact the Ross Center for Disability Services. The Ross Center for Disability Services is located in the Campus Center, UL 211. You can contact them by calling: 617-287-7430 or sending an email to: ross.center@umb.edu. Once you have received your accommodation letter, please meet with me to discuss it as soon as possible. I want to support you the best way I can!

A Note about Collaborative Work versus Dishonesty

In this class, you be writing written responses to readings. In addition, you will frequently be asked to work with other students both in and out of class. In these instances, feel free to explore ideas together, but be sure that your final product, usually in written form, is something that represents your individual thinking. If your work and the work of another student or students is substantially similar, this suggests that only one person did the thinking. In this case, no credit will be given to anyone involved. For any written work, you will not receive credit for work that is not your own. This includes work created by an AI tool. The UMass Boston Student Code of Conduct defines dishonesty (cheating or plagiarizing) and the serious consequences that may ensue. You may find the complete code in your student handbook or the university website at: http://www.umb.edu/student_services/student_rights/code_conduct.html

Health, Wellbeing and Success

UMass Boston is a vibrant, multi-cultural, and inclusive institution committed to ensuring that all members of our diverse campus community are able to thrive and succeed. The university provides a wide variety of resources to support studentsô overall success.

- Are you in emotional distress? Call 617.287.5690 to speak with a licensed clinician 24/7 who can offer support, crisis recommendations, and assistance with finding resources.
- Have a campus question or issue? Use Here4U in the UMass Boston app or via www.umb.edu/here4U.
- Want advice in navigating a university or life situation? Contact the Dean of Students Office at www.umb.edu/deanofstudents.
- Want to connect with housing and food insecurity support, student life groups and events, or recreation activities? Visit Campus Life - UMass Boston (umb.edu).
- Want to access resources specifically for immigrant-origin, DACA, TPS, and undocumented students? Visit Immigrant Student Programs - UMass Boston (umb.edu).
- Looking for additional identity-based community support? Find more resources at Inclusive Identity - UMass Boston (umb.edu)
- Want to make the most of your academic experience? Visit www.umb.edu/academics/vpass/academic_support.
- Unable to attend class on a specific date or participate in an exam or class requirement due to a religious observance? Fill out the excused absence form (requires 2-weeksô notice) to request religious accommodation at Right To Excused Absence Because Religious Belief - UMass Boston (umb.edu)