Teaching Assistant Seminar

COURSE DESCRIPTION: Presentations of contemporary issues in laboratory education. Topics include state and national standards for laboratory education, cognitive development, the importance of culture, language and gender in the laboratory, authentic assessment, and interdisciplinary curriculum.

STUDENT LEARNING OUTCOMES: This course involves the students in a wide range of methods and materials designed to portray the teaching of laboratories as a student-centered experience. The teaching assistant is urged to design courses for students in order to serve their personal needs and responsibilities for society and career decisions.

The course is centered upon the recent publication of National Academy of Sciences “How People Learn” and will consider theories of learning in light of understanding and advancing students’ learning through classroom/laboratory interactions.

The student will learn teaching techniques that provide experiences respecting cultural diversity, and provide activities that will draw upon the cultural diversity implicit in the content being presented as well as providing for differences in such factors as gender, ethnic membership, academic ability and background.

The student is required to demonstrate knowledge of assigned readings, subjects discussed in class, and current trends in laboratory education.

The student is expected to develop an attitude that is more than knowledge of facts about our world and universe, but it is also a way of thinking.

COURSE MATERIALS: The instructor will make learning resources (e.g., books, handouts, reserve articles, software, and websites) available during the semester. You will be given information about these resources. In addition, invited speakers may address various topics during this class.
**Evaluation:** There are 9 in-class sessions. Grades for this course will be assessed according to the following evaluation criteria:

1. **Written Assignment:** Student Group Reflections can be over the following themes:
   - May be completed in reference to journal or other scholarly article distributed during class for the following week.
   - May be completed during the week prior to class and relate to students’ laboratory/teaching experience. Prompts will be provided for reflection. Reflection due prior to beginning of class.
   - Reflections may be completed during class as team learning assignment (reviewing case studies, teaching videos, etc).

2. **Laboratory peer evaluations** – you will be asked to attend and evaluate a peer’s laboratory session on an announced, invited basis **three times.**

3. **Reading report submission** over scholarly article regarding teaching/learning in math/science. Students will find and submit an article from a peer reviewed journal that they find appropriate for laboratory teaching assistants. Instructor reserves the right to accept or deny the paper based on scholarliness, relevance, and applicability.

4. **Development of an Active Learning Teachable unit:** Students will be allowed to choose a group in which to develop a topic. Students will be given an example of an Active Learning Tidbit. Assessment of the student’s active learning tidbit will be done by completion of a Teachable Framework Worksheet. Only one per group needs to be turned in. Those who actively participated will add their names under the Acknowledgments section of the worksheet.
   **Assignments are due at the beginning of the next class. LATE WORK WILL NOT BE ACCEPTED – NO EXCEPTIONS.**

<table>
<thead>
<tr>
<th>Assignment</th>
<th>Points</th>
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<tbody>
<tr>
<td>6 Group reflections @ 50 points each</td>
<td>300 points</td>
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<tr>
<td>Peer laboratory evaluation – 100 points each x 3</td>
<td>300 points</td>
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<tr>
<td>Reading Report over paper submission</td>
<td>200 points</td>
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<tr>
<td>Active Learning Teachable Unit</td>
<td>100 points</td>
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<td><strong>Total</strong></td>
<td><strong>660 points</strong></td>
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**A = 90-100%; B = 80-89%; C = 70-79%; D = 60-69%**

This course is graded on a pass-fail basis; however, some form of grading scale needs to be implemented to identify if you are passing or failing.

It is the responsibility of the student to obtain any material missed during an absence from his/her classmates. It is **always** your responsibility to determine what happened in class or laboratory during your absence. If you are absent, you must obtain any handouts or assignments from me in my office on your own time: I rarely bring assignments to class more than once. You must obtain class notes from other students.
READING REPORTS
We will discuss recent primary articles. This will be used to relate the material covered in class to current work in the field of microbial ecology. You are expected to read all articles prior to the assigned date. You will be required to submit a reading report summarizing the contents of each article. Reading Reports are due by the beginning of class on the assigned due date and should be submitted electronically (Late reports will NOT be accepted.

1. Provide the title, author(s), date and source of each reading.
2. Indicate the senior author's affiliation (e.g. Department of Microbiology and Molecular Genetics, Michigan State University).
3. Observation that led to research (look in abstract and introduction)
   a. Describe 2–3 observations.
4. Question (try rewording the title)
   a. Identify the model organism/system.
   b. State why the model is an appropriate choice.
   c. State why the question is important (what did the authors hope to learn about the field?).
5. Hypotheses (usually not stated but implied in abstract or introduction; look for phrases like “this research shows…”)
   a. Explain why these hypotheses make sense based on current knowledge (introduction).
6. Experiment (look at the figures to determine what they did)
   a. Choose 2–3 key figures that directly address the hypotheses.
   b. Restate the model organism/system (figure legend).
   c. Describe general experimental design; what was measured/compared and how?
   d. Describe the methods and controls (draw a flow diagram on the board when presenting).
   e. Explain why the choice of controls was appropriate.
7. Results (look at the figures first)
   a. Explain figures clearly; restate what is being compared to what for each one.
   b. Look for trends; e.g., What is increased over what?
   c. Identify the controls and how they validate the trends.
   d. Look for statistical analyses (figure legend or results) that validate the data.
8. Conclusion (based on the data, not on the discussion)
   a. Does the data support the hypotheses?
   b. Are there other possible explanations for the data?
   c. Is the data convincing (stats)?
   d. How could the experiment be improved?
   e. Why is the data interesting; how does it contribute to our understanding of the field?
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<thead>
<tr>
<th>Lecture Date</th>
<th>Class title</th>
<th>Reading</th>
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<tbody>
<tr>
<td>Aug 29</td>
<td>Introduction to Teaching Seminar</td>
<td>Assigned in Class</td>
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<tr>
<td>Sept 5</td>
<td>Mentoring</td>
<td>Assigned in Class</td>
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<td>Sept 12</td>
<td>Assessment</td>
<td>Assigned in Class</td>
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<td>Sept 19</td>
<td>Scientific Teaching</td>
<td>Assigned in Class</td>
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<td>Sept 26</td>
<td>How People Learn</td>
<td>Assigned in Class</td>
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<td>Oct 3</td>
<td>Active Learning</td>
<td>Assigned in Class</td>
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<td>Oct 10</td>
<td>Microteaching-Peer evaluation this week per rubric</td>
<td>Assigned in Class</td>
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<tr>
<td>Oct 17</td>
<td>Microteaching-Peer evaluation this week per rubric</td>
<td>Assigned in Class</td>
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<tr>
<td>Oct 24</td>
<td>Developing Teachable Units/Diversity</td>
<td>Assigned in Class</td>
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<tr>
<td>Oct 31</td>
<td>Microteaching-Peer evaluation this week per rubric</td>
<td>Assigned in Class</td>
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<td>Nov 7</td>
<td>Microteaching-Peer evaluation this week per rubric</td>
<td>Assigned in Class</td>
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<td>Nov 14</td>
<td>Group Presentations of Teachable Units</td>
<td>Assigned in Class</td>
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<tr>
<td>Nov 21</td>
<td>Group Presentations of Teachable Units</td>
<td>Assigned in Class</td>
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REQUIRED UNIVERSITY POLICIES
Students with Disabilities and Veterans: All programs in Life Sciences (LSCI) comply with the federal Americans with Disabilities Act (ADA) of 1990, including the ADA Amendments from 2008 (PL 110-325). This anti-discrimination statute provides civil rights protection for persons with disabilities. This statute requires that all qualified students with disabilities be guaranteed a learning environment that provides reasonable accommodations of their disabilities. This act also includes returning veterans who may be experiencing cognitive, emotional and/or physical access issues in the classroom or on campus. If you are a returning veteran or you suspect that you may have a disability requiring accommodation, please contact the Office of Disability Services (located in Driftwood 101) at (361) 825-5816. Please contact this office in a timely manner, as they must review requests and prepare accommodations and send the accommodation letters.

If you need disability accommodations in this class, please contact the instructor as soon as possible. If you have mobility problems, are pregnant, or you may have a history of seizures, please notify the instructor PRIVATELY so that assistance can be given in case of fire drills or emergencies. Please have your Faculty Notification Letter from the Disabilities Service Office when you talk with the Instructor.

GRADE APPEALS
A student who believes that he or she has not been held to appropriate academic standards as outlined in the class syllabus, equitable evaluation procedures, or appropriate grading, may appeal the final grade given in the course. The burden of proof is on the student to demonstrate the appropriateness of the appeal. A student with a complaint about a grade is encouraged to first discuss the matter with the instructor. For complete details on the process, including the responsibilities of the parties involved in the process and the number of days allowed for completing the steps in the process, consult Texas A&M University-Corpus Christi University Procedure 13.02.99.C.2.01 Student Grade Appeal Procedures (http://www.tamucc.edu/provost/university_rules/index.html), and the College of Science and Engineering Grade Appeals webpage (http://sci.tamucc.edu/students/GradeAppeal.htm).

1). For assistance and/or guidance in the grade appeal process, students may contact the chair or director of the appropriate department or school or the College of Science and Engineering Dean’s Office.

Academic Advising: The College of Science and Engineering requires that students meet with an Academic Advisor as soon as they are ready to declare a major. The Academic Advisor will set up a degree plan, which must be signed by the student, a faculty mentor, and the department chair. The College's Academic Advising Center is located in Center for Instruction--Suite 350, and can be reached at (361) 825-6094.

CLASS POLICIES
Attendance: Students are expected to attend every scheduled class and laboratory meeting. It is the responsibility of the student to obtain any material missed during an absence from his/her classmates. Power Points are not placed in the library, and only Power Points from certain sections will be placed on Blackboard™ 9.1, or on a website. For labs, the instructor (TA) should be notified PRIOR to lab if the student will be absent (except in emergency situations). Students must attend the laboratory section for which they originally registered. “Make-up” by attending other lab sections is NOT permitted except in emergencies, only with prior approval.

Academic Integrity: TAMUCC academic policies are in force, including standards for academic integrity & honesty, plagiarism, grammar and spelling. All policies are described in the TAMUCC catalogue and the Code of Conduct in the Student Handbook.

DO NOT SHARE WRITTEN INFORMATION BETWEEN PARTNERS ON LAB REPORTS, AND PLACE THIS IN YOUR LAB NOTEBOOKS! THIS IS PLAGIARISM, AND YOUR TA WILL AWARD ALL OFFENDING PARTIES A ZERO ON THE ASSIGNMENT! We also have to report all instances of cheating to the Dean of Students office on an Academic Misconduct form.

Citation format: Please use Council of Science Editors format. If you don’t know this, ask someone in Pro Skills! A useful link on this format is available at this URL: http://writing.wisc.edu/Handbook/DocCSE.html
**Professional Courtesy:** DO NOT USE CAMERA PHONES IN LECTURE OR LAB. DO NOT SEND TEXT MESSAGES DURING CLASS. Please turn off all cell phones, beepers, Bluetooth devices, Palm Pilots, Black Berrys, etc., before entering the classroom or laboratory, or at least place them on silent mode. I would prefer that earpieces not be worn in lecture or laboratory. DO NOT TAKE PHOTOS of Power Point slides or videos with your cell phone camera unless otherwise instructed. Recording of lectures with tape recorders can only be done with permission of instructor.

**Classroom Behavior:** “Texas A&M University-Corpus Christi, as an academic community, requires that each individual respect the needs of others to study and learn in a peaceful atmosphere. Under Article III of the Student Code of Conduct, classroom behavior that interferes with either (a) the instructor’s ability to conduct the class or (b) the ability of other students to profit from the instructional program may be considered a breach of the peace and is subject to disciplinary sanction outlined in article VII of the Student Code of Conduct. Students engaging in unacceptable behavior (including excessive text messaging) may be instructed to leave the classroom. This prohibition applies to all instructional forums, including classrooms, electronic classrooms, labs, discussion groups, field trips, etc.”

**List-serve:** All students are on the Blackboard list serve for the course, and to a second opportunities-list serve. To subscribe, send a separate e-mail to opportunities-list-request@sci.tamucc.edu. Make sure that your e-mail appears in the “From” heading. In the subject heading, type “subscribe,” then send the e-mail. Next, you will receive a second message with a long set of letters and numbers in the subject line. You must also reply to that message in order to be subscribed to the list-serve.

After the initial message to subscribe, to send items on the list-serve, just type opportunities-list@sci.tamucc.edu (do NOT add –request after list). You may not receive the messages from the list-serve if your Internet service provider (Yahoo, Hotmail, Excite, Roadrunner, Grande, etc.) keep these messages from being placed in junk-mail. The University administration prefers that you use the islander.tamucc.edu accounts.

At the end of the course, send an e-mail that contains your e-mail address in the “From” heading to opportunities-list@sci.tamucc.edu. In the subject heading, type the word “unsubscribe,” then send the e-mail. I hope that students will continue to subscribe to opportunities-list@sci.tamucc.edu!

Dropping courses: I hope that students do not find it necessary to drop this class. However, events can sometimes occur that make dropping a course necessary or wise. Please consult with me before you decide to drop to be sure it is the best thing to do. You as adults have to be the final judge of your action whether to drop or not. For students applying to professional or graduate school, you will have to explain why you dropped this class or any other class. Receiving a “W” is NOT automatic; you must initiate the paperwork in the Student Services Center (the “Round Building”). Just stopping attendance and participation WILL NOT automatically result in your being dropped from the class.

**Deadline to drop course with a “W” grade:** November 7  
**Deadline to withdraw from University for the fall term:** December 1