Secondary Science Laboratory Techniques – SMTE 4320.001/101
Department of Life Sciences
Fall 2015

A. COURSE INFORMATION

Course number/section: SMTE 4320.001/101
Class meeting time: TR 7:30-9:20pm
Class location: EN 201
Course Website: Blackboard 9@tamucc.edu

B. INSTRUCTOR INFORMATION

Instructor: Katie Crysup
Office location: EN 201
Office hours: TR 7:00-7:30p, by appointment
Telephone: 361.815.5966
e-mail: Katie.crysup-sikes@tamucc.edu
Appointments: Please either call, text or email me to make an appointment.

C. COURSE DESCRIPTION

Catalog Course Description: Emphasis on teaching laboratory techniques for inquiry-based learning of the major concept areas of science and other content relevant for 4-12 science classrooms and associated with the Texas Essential Knowledge and Skills (TEKS). Instruction regarding pedagogical foundations are those that are contained in the Science Content Standards and Science Teaching Standards as prescribed by the National Science Education Standards, the National Science Teachers Association and the Texas Education Agency.

D. PREREQUISITES AND COREQUISITES

Prerequisites
CHEM1312, EDCI3311

Corequisites
Students in SMTE 4320 are expected to register for Laboratory Safety Seminar – SMTE 0091. Students must complete this web-based course during the first week of the semester to be allowed to attend and complete SMTE 4320.

E. REQUIRED TEXTBOOK(S), READINGS AND SUPPLIES

Required Textbook(s)
None
Optional Textbook(s) or Other References

Supplies –
safety googles/glasses
1-subject spiral notebook

F. STUDENT LEARNING OUTCOMES AND ASSESSMENT
Upon completion of this course, students will be able to—
1. Examine laboratory settings for any safety hazards, and to bring laboratories into compliance with local, state, and federal regulations.
2. Maintain safe practices in a laboratory setting, and inculcate these practices fairly, objectively, and consistently with their students;
4. Explore and discuss various methods and instruments used to evaluate a student’s progress based on learning objectives.
5. Discuss the science laboratory’s role in the broader educational community (e.g., parent interactions, science fairs, and special student populations).
6. Write original, research-driven, learner-centered laboratory exercises based on units of instruction that follow guidelines of the Texas Essential Knowledge and Skills (TEKS) or other state guidelines.
7. Design, write, and direct (as an individual) a laboratory on a scientific topic of his/her own choosing as approved by the instructor, and revised the lesson plans for this laboratory based on instructor and peer comments.
8. Model appropriate and approved practices in managing a laboratory setting, including basic laboratory skills.
9. Critique scientific methodology and approaches by analysis of current primary literature in education.

G. INSTRUCTIONAL METHODS AND ACTIVITIES
The student will be expected to:
- attend and participate in classroom and laboratory activities
- read assignments prior to class
- take examinations
- participate in developing and presenting lesson plans and laboratory activities while working both collaboratively and alone.
- correlate laboratory and other activities with the Texas Essential Knowledge and Skills (TEKS).
• Write original, research-driven, learner-centered classroom and laboratory exercises based on units of instruction that follow guidelines of the No Child Left Behind Act of 2001, as well as TEKS or other state guidelines.
• Design, write, and direct (as an individual) lesson plans on a scientific topic of his/her own choosing as approved by the instructor, and revise the lesson plans based on instructor and peer comments.
• Model appropriate and approved practices in managing a laboratory setting, including basic laboratory skills.

H. MAJOR COURSE REQUIREMENTS AND GRADING

<table>
<thead>
<tr>
<th>EVALUATION</th>
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<tbody>
<tr>
<td>NO E-MAILED ASSIGNMENTS WILL BE ACCEPTED. HARD COPIES SUBMITTED WHEN DUE IN CLASS OR VIA BLACKBOARD TO RECEIVE CREDIT</td>
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Points will be awarded for the following:
1. Flinn Science Safety Course Online 300 points
2. Semester Scope and Sequence 200 points
3. Interactive Notebook/Journal 200 points
4. Individual Lesson Lab presentations (2 @ 100 pts) 200 points
5. Participation and attendance 50 points

Total: 950 points

Scale:
A – 90 – 100%
B – 80 – 89%
C – 70 – 79%
D – 60 – 69%

This syllabus is a draft in progress: the instructor reserves the right to modify its contents. While the instructor will attempt to notify all students of any changes, it is ultimately the student’s responsibility to keep appraised of those substitutions/changes/additions/deletions/etc.
## COURSE CONTENT/SCHEDULE – will review first day of class

<table>
<thead>
<tr>
<th>DATE</th>
<th>Class/Lab</th>
<th>Assignment Due Date (TBD)</th>
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<tbody>
<tr>
<td>Aug 27, Thurs</td>
<td>Introductions/Syllabus/Safety Pre-Test</td>
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<tr>
<td>Sept 1, Tues</td>
<td>How People Learn/Science Inquiry</td>
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<td>Sept 3, Thurs</td>
<td>Laboratory Hazards Activity</td>
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<td>Sept 8, Tues</td>
<td>Texas Laboratory Safety Standards</td>
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<td>Sept 10</td>
<td>Use of Lab Safety Equipment Lab</td>
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<td>Sept 15</td>
<td>Responding to Lab Accidents</td>
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<td>Sept 17</td>
<td>Chemistry Lab I</td>
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<td>Sept 22</td>
<td>Chemical Safety/MSDS</td>
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<td>Sept 24</td>
<td>Chemistry Lab II</td>
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<td>Sept 29</td>
<td>Biological Lab Safety</td>
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<tr>
<td>Oct 1</td>
<td>Biology Lab I</td>
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<td>Oct 6</td>
<td>Animals and Food In the Classroom</td>
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<td>Oct 8</td>
<td>Biology Lab II</td>
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<td>Oct 13</td>
<td>Microbiological Practices</td>
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<td>Oct 15</td>
<td>Microbiology Lab Cell Phones and Soil Microorganisms</td>
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<td>Oct 20</td>
<td>Water Chemistry Lab</td>
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<td>Oct 22</td>
<td>Evolution and Adaptations</td>
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<td>Oct 27</td>
<td>Adaptations Lab</td>
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<td>Oct 29</td>
<td>Human Body Systems Labs</td>
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<td>Nov 3</td>
<td>Earth Science Lab Activities</td>
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<td>Nov 5</td>
<td>Physics Lab Force and Motion</td>
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<td>Nov 10</td>
<td>Physics Lab Density</td>
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<td>Nov 12</td>
<td>Field Investigations</td>
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<td>Nov 17</td>
<td>Probes and Instruments</td>
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<td>Nov 19</td>
<td>Field Trip opportunities</td>
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<td>NOV 24</td>
<td>Outdoor Field Investigation</td>
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<td>Nov 26</td>
<td>HOLIDAY</td>
<td>HOLIDAY</td>
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<td>Dec 1</td>
<td>First Week Responsibilities</td>
<td>Scope and Sequence</td>
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<td>Dec 3*</td>
<td>Final presentations and peer evaluations</td>
<td>Flinn Safety Course Certificate</td>
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Due dates of assignments will be determined by lesson presentations. Topics above are subject to change depending on the needs of the students. *December 3, 2015 is the official final exam time. The location will be EN201 and begin at 7:30p.

Note: Changes in this course schedule may be necessary and will be announced to the class by
the Instructor. The assignments and exams shown are directly related to the Student Learning Outcomes described in Section F.

J. **COURSE POLICIES**

**Attendance/Tardiness**
Students are expected to attend *every scheduled class and laboratory meeting*. In general, only unavoidable absences are excused (major family illness or accidents, deaths, funerals).

Points missed because of an unexcused absence (including tardiness and leaving early) cannot be recovered. An excused absence allows us to make alternative arrangements for completing assignments. The documentation required for an absence to be excused must be…
- from an appropriate source (e.g., doctor, dentist, funeral director) who states the nature of the event that caused (or will cause) your absence.
- in writing, on official stationary, and signed. (I do not return excuses to you.) Telephone calls, FAXes, and e-mails are not acceptable.
- presented prior to the absence for a scheduled event (e.g., university-sponsored activity, recognized religious holiday, military service).
- presented no more than one week after the date of an unexpected absence.

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.

***Please turn off all electronic devices before entering the classroom or laboratory, or at least place them on silent mode.***

K. **COLLEGE AND UNIVERSITY POLICIES**

- **Academic Integrity (University)**
  It is expected that university students will demonstrate a high level of maturity, self-direction, and ability to manage their own affairs. Students are viewed as individuals who possess the qualities of worth, dignity, and the capacity for self-direction in personal behavior.
  See Full University Policy at [http://catalog.tamucc.edu/content.php?catoid=10&navoid=313#Academic_Integrity](http://catalog.tamucc.edu/content.php?catoid=10&navoid=313#Academic_Integrity)

- **Classroom/Professional 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 may be instructed to leave the classroom. This prohibition applies to all instructional forums, including classrooms, electronic classrooms, labs, discussion groups, field trips, etc.

- **Deadline for Dropping a Course with a Grade of W (University)**
  The grade of W will be assigned to any student officially dropping a course. Please consult with the instructor before you decide to drop to be sure it is the best thing to do. Just stopping attendance and participation WILL NOT automatically result in your being dropped from the class. Should dropping the course be the best course of action, visit the Office of the University Registrar for the Course Drop Form that must submitted by **November 6, 2015**. No student is eligible to receive a W without completing the official drop process by this deadline of **November 6, 2015**. Please consult the Academic Calendar ([http://www.tamucc.edu/academics/calendar/](http://www.tamucc.edu/academics/calendar/)) for the last day to drop a course.

- **Grade Appeals (College of Science and Engineering)**
  As stated in University Procedure 13.02.99.C2.01, Student Grade Appeal Procedures, 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 upon 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, including the responsibilities of the parties involved in the process and the number of days allowed for completing the steps in the process, see University Procedure 13.02.99.C2.01, Student Grade Appeal Procedures. These documents are accessible through the University Rules website at [http://www.tamucc.edu/provost/university_rules/index.html](http://www.tamucc.edu/provost/university_rules/index.html), and the College of Science and Engineering Grade Appeals webpage at [http://sci.tamucc.edu/students/GradeAppeal.html](http://sci.tamucc.edu/students/GradeAppeal.html). For assistance and/or guidance in the grade appeal process, students may contact the chair or director of the appropriate department or school, the Office of the College of Science and Engineering Dean, or the Office of the Provost.

- **Disability Services**
  Disability Services (DS) is the hub for coordinating services and accommodations to ensure accessibility and utilization of all programs for all Texas A&M University-Corpus Christi students with disabilities. Our services are designed to meet the unique educational needs of enrolled students with documented permanent or temporary disabilities. DS provides intake and consultation services to students seeking to register with our office. DS reviews an individual’s documentation of disability and assesses eligibility for services and the determination of reasonable accommodations. For more information visit the Disability Services Office at 116 Corpus Christi Hall or go to [http://disabilityservices.tamucc.edu/](http://disabilityservices.tamucc.edu/)
• Statement of Civility
  Texas A&M University-Corpus Christi has a diverse student population that represents the population of the state. Our goal is to provide you with a high quality educational experience that is free from repression. You are responsible for following the rules of the University, city, state and federal government. We expect that you will behave in a manner that is dignified, respectful and courteous to all people, regardless of sex, ethnic/racial origin, religious background, sexual orientation or disability. Behaviors that infringe on the rights of another individual will not be tolerated.

GENERAL DISCLAIMER
I reserve the right to modify the information, schedule, assignments, deadlines, and course policies in this syllabus if and when necessary. I will announce such changes in a timely manner during regularly scheduled lecture periods.