Senior Chemistry Seminar CHEM 4292.001  
Department of Physical & Environmental Sciences  
Spring 2020

A. COURSE INFORMATION  
Course number/section: CHEM 4292.001  
Class meeting time: W 12-1:40 pm  
Class location: OCNR 259  
Course Website: See Blackboard

B. INSTRUCTOR INFORMATION  
Instructor: Patrick Larkin  
Office location: 203 Center for Science  
Office hours: M 10 am-noon, TR 3:30-5 pm  
Telephone: (361) 825-3258  
e-mail: patrick.larkin@tamucc.edu  
Appointments: email or phone to schedule an appointment

C. COURSE DESCRIPTION  
Senior seminar is a capstone course for chemistry majors. Students are asked to apply the information, theory and skills acquired in the classroom and laboratory to the examination of significant, chemistry-related societal issues. Coursework involves the analysis of research reports, review articles and other professional work, preparation of essays and participation in case-based study exercises. Senior seminar also emphasizes professional development activities to help students prepare for life after graduation.

D. PREREQUISITES AND COREQUISITES  
Chemistry major, Senior standing

E. REQUIRED TEXTBOOK(S), READINGS AND SUPPLIES  

Optional Textbook(s) or Other References  
All other materials will be posted on Blackboard or provided in class

Supplies  
none
F. STUDENT LEARNING OUTCOMES AND ASSESSMENT

Assessment is a process used by instructors to help improve learning. Assessment is essential for effective learning because it provides feedback to both students and instructors. A critical step in this process is making clear the course’s student learning outcomes that describe what students are expected to learn to be successful in the course. The student learning outcomes for this course are listed below. By collecting data and sharing it with students on how well they are accomplishing these learning outcomes students can more efficiently and effectively focus their learning efforts. This information can also help instructors identify challenging areas for students and adjust their teaching approach to facilitate learning.

By the end of this course, students should be able to:

1. Use multiple resources to prepare succinct, clearly-written essays on particular scientific topics
2. Apply their knowledge and skills in chemistry to the critical review of social issues related to science and technology
3. Identify personal skill sets and three potential career tracks
4. Prepare a resume and personal budget

G. INSTRUCTIONAL METHODS AND ACTIVITIES

Case-based Studies
A number of societal issues have significant, chemistry-related components. Classroom exercises will involve case-based scenarios that will require background reading, analysis, and discussion.

Essays. Each case-based study will require the preparation of a one page (~400 word) essay guided by a set of questions provided with the reference material. Essays should be targeted to an audience of peers, i.e. fellow chemistry/science majors who have not read the background material. Each essay is worth 10 pts, and will be primarily scored on the basis of content, style, and grammar (0-3 pts each):

   Content is concerned with how well the author addresses the essay topic. It demonstrates their understanding of the concepts involved, and their use of evidence, logic and reason to address the guiding questions.

   Style is concerned with an essay’s clarity, brevity, and organization. Length limits mean that the topic must be addressed in a clear, yet succinct, manner. Good essays are well organized with a beginning, middle, and end. They tell a story rather than provide a set of “answers” to guiding questions.

   Grammar is concerned with the mechanics of the essay such as syntax, punctuation and spelling. Good essays use consistent, correct verb tenses and have few, if any, spelling or punctuation errors.
Essay Scoring Matrix

**Very Good to Excellent** (8-10 pt): Essay addresses the topic thoroughly yet succinctly. Text indicates that the author has a clear understanding of the concepts involved. Essay length is appropriate, and does not include unnecessary words or statements. All guiding questions have been addressed. Few, if any, factual, spelling, or grammatical errors are present. The essay is easy to read with an introduction, body, and ending that combine to tell a story rather than “answer” a set of questions.

**Fair to Good** (5-7 pt): Essay addresses the topic reasonably well but some guiding questions have not been adequately addressed. Essay reads reasonably well, but could benefit from greater organization, brevity, or clarity. Essay length may be too long or short. Some factual, spelling or grammatical errors are present.

**Poor** (1-4 pt): Essay only weakly addresses topic. Author demonstrates a weak understanding of principles and concepts involved. Few guiding questions are being adequately addressed. Essay is poorly organized, difficult to read, and/or does not meet specified length standards. Numerous factual, spelling or grammatical errors are present.

**Professional Development Exercises**
A number of exercises related to the elements of a successful job search will be covered, including: the identification of personal skill sets, organizational research, interviewing skills, preparation of a resume, salary requirements and personal budgets.

**Oral Presentation**
A 15 minute PowerPoint presentation will be required of all students, on a chemistry-related topic of their choice. An abstract (Title and 1 paragraph summary) of the presentation will be required of each student before presentations begin. Choice of topic is up to the student but it must relate directly to chemistry. If you have a question regarding your topic please consult with your instructor.

**Attendance and Participation**
Seminar classes are small by design, and not intended to function as lectures. They are conducive to discussion and examination of topics in depth. It’s expected that everyone will attend regularly and contribute to the overall discussion. This doesn’t mean that everyone must contribute equally. Some people are naturally more comfortable at expressing themselves. Others may be better at proposing thoughtful questions or producing careful insights. Some are good at both. Throughout the semester I will pay attention to the quality and quantity of everyone’s participation. I will then assign a participation score, based on a 10 point scale, that reflects their contribution.
H. MAJOR COURSE REQUIREMENTS AND GRADING

<table>
<thead>
<tr>
<th>Assignment/Activity</th>
<th>pts</th>
<th>% of final Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skills List</td>
<td>10</td>
<td>7</td>
</tr>
<tr>
<td>Climate Essay</td>
<td>10</td>
<td>7</td>
</tr>
<tr>
<td>Resume (Draft)</td>
<td>10</td>
<td>7</td>
</tr>
<tr>
<td>Career Options List</td>
<td>10</td>
<td>7</td>
</tr>
<tr>
<td>Antibiotics essay</td>
<td>10</td>
<td>7</td>
</tr>
<tr>
<td>Budget</td>
<td>10</td>
<td>7</td>
</tr>
<tr>
<td>Pollution essay</td>
<td>10</td>
<td>7</td>
</tr>
<tr>
<td>Presentation abstract</td>
<td>5</td>
<td>3.5</td>
</tr>
<tr>
<td>Presentation</td>
<td>20</td>
<td>14</td>
</tr>
<tr>
<td>Resume (Final)</td>
<td>10</td>
<td>7</td>
</tr>
<tr>
<td>Attendance (2pt per class)</td>
<td>28</td>
<td>19.5</td>
</tr>
<tr>
<td>Participation</td>
<td>10</td>
<td>7</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>143</td>
<td>100</td>
</tr>
</tbody>
</table>

The grading scale will be: A ≥ 90% of possible points, B ≥ 80 %, C ≥ 70 %, D ≥ 60 %, F < 60 %.
There will be a 10% reduction, per day, in credit for overdue assignments.

I. COURSE CONTENT/SCHEDULE

<table>
<thead>
<tr>
<th>Date</th>
<th>Topic</th>
<th>What's Assigned?</th>
<th>What's Due?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jan 22</td>
<td>Introduction/Library Skills</td>
<td>Climate Change essay</td>
<td></td>
</tr>
<tr>
<td>Jan 29</td>
<td>Skills Analysis</td>
<td>skill list</td>
<td></td>
</tr>
<tr>
<td>Feb 5</td>
<td>Resumes &amp; interviewing</td>
<td>resume (draft)</td>
<td>skill list</td>
</tr>
<tr>
<td>Feb 12</td>
<td>Climate Change</td>
<td>Ab Resistance essay</td>
<td>climate essay</td>
</tr>
<tr>
<td>Feb 19</td>
<td>Career Center</td>
<td>Career list</td>
<td>resume (draft)</td>
</tr>
<tr>
<td>Feb 26</td>
<td>Salary &amp; Budget</td>
<td>budget/resume (final)</td>
<td>Career List</td>
</tr>
<tr>
<td>Mar 4</td>
<td>Antibiotic resistance</td>
<td>Pollution essay</td>
<td>antibiotics essay</td>
</tr>
<tr>
<td>Mar 11</td>
<td>No class - Spring Break</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mar 18</td>
<td>Graduate/Professional School</td>
<td>Presentation Abstract</td>
<td>budget</td>
</tr>
<tr>
<td>Mar 25</td>
<td>Pollution &amp; Toxicology</td>
<td>Chemical Weapons</td>
<td>Pollution essay</td>
</tr>
<tr>
<td>Mar 1</td>
<td>Nobel Prize Winners</td>
<td>Post-Graduate Plans</td>
<td>Presentation Abstract</td>
</tr>
<tr>
<td>Apr 8</td>
<td>Class Presentations</td>
<td>work on presentations</td>
<td>Presentations</td>
</tr>
<tr>
<td>Apr 15</td>
<td>Class Presentations</td>
<td>work on presentations</td>
<td>Presentations</td>
</tr>
<tr>
<td>Apr 22</td>
<td>Class Presentations</td>
<td>work on presentations</td>
<td>Presentations</td>
</tr>
<tr>
<td>Apr 29</td>
<td>Class Presentations</td>
<td>work on presentations</td>
<td>Presentations</td>
</tr>
<tr>
<td>May 6</td>
<td>No Class</td>
<td></td>
<td>Resume (final)</td>
</tr>
</tbody>
</table>
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
The small class size and course format makes it necessary for students to arrive on time. Those who are late multiple times will have attendance points deducted.

Late Work and Make-up Exams
There will be a 10% reduction, per day, in credit for overdue assignments.

Cell Phone Use
As a courtesy to your instructor and fellow seminar participants, cell phone use unrelated to class activities is not allowed

Laptop Use
As a courtesy to your instructor and fellow seminar participants, laptop use unrelated to class activities is not allowed

Food in Class
Be discreet and appropriate in your consumption of food and beverage in class

Participation
Attendance and participation in class discussions is required and will count for a significant portion of your grade.

K. COLLEGE AND UNIVERSITY POLICIES

- Academic Integrity (University)
  University students are expected to conduct themselves in accordance with the highest standards of academic honesty. Academic misconduct for which a student is subject to penalty includes all forms of cheating, such as illicit possession of examinations or examination materials, falsification, forgery, complicity or plagiarism. (Plagiarism is the presentation of the work of another as one’s own work.) In this class, academic misconduct or complicity in an act of academic misconduct on an assignment or test will result in a failing grade.

- 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.

- **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.

- **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** be submitted. No student is eligible to receive a W without completing the official drop process by this deadline. 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**
  The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other
things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please call (361) 825-5816 or visit Disability Services in Corpus Christi Hall 116.

If you are a returning veteran and are experiencing cognitive and/or physical access issues in the classroom or on campus, please contact the Disability Services office for assistance at (361) 825-5816.

http://disabilityservices.tamucc.edu/

- **Statement of Academic Continuity**
  In the event of an unforeseen adverse event, such as a major hurricane and classes could not be held on the campus of Texas A&M University–Corpus Christi; this course would continue through the use of Blackboard and/or email. In addition, the syllabus and class activities may be modified to allow continuation of the course. Ideally, University facilities (i.e., emails, web sites, and Blackboard) will be operational within two days of the closing of the physical campus. However, students need to make certain that the course instructor has a primary and a secondary means of contacting each student.

**L. OTHER INFORMATION**

- **Academic Advising**
  The College of Science & 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. Meetings are by appointment only; advisors do not take walk-ins. Please call or stop by the Advising Center to check availability and schedule an appointment. The College’s Academic Advising Center is located in Center for Instruction 350 or can be reached at (361) 825-3928.

**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.