

Course Syllabus for CHEM495: Senior Seminar in Chemistry

Instructor: Dr. Jason C. Hurlbert
Office: Sims 301B
Office hours: MWF 11-12 and by appointment
Phone: 323-4928
E-mail: hurlbertj@winthrop.edu

Course Meeting Time: 3:30 – 4:20 Mondays in Sims 209

Course Website:

http://bohr.winthrop.edu/faculty/hurlbert/link_to_webpages/courses/chem495/chem495home.html

Course Goals:

This course is designed to give senior level students opportunities to use the skills they have gained during their chemical education. The course will include lessons in information retrieval, analyzing and interpreting scientific articles, self-assessment, ethics in the laboratory, interviewing techniques and the oral discussions of scientific concepts. The will be closely tied to CHEM494 as the weekly speakers and the topics they discuss with the department will provide ample opportunities for the reinforcement of the concepts discussed in the course.

The scientific skills discussed in the course will be employed in the primary grading instrument for the course: a review article discussing an area of chemistry selected by the student. Participating students will select an area of chemistry that they are interested in and then carefully research it. In their research, they will identify a seminal scientific paper in the field and give a 10 minute talk about their chosen paper making certain that they adequately introduce the field, describe a problem of interest, analyze the data and explain the conclusions. Students will also prepare a 7 page review article summarizing the state of the science in their chosen area. The grading rubric for the paper is on the course website.

Finally, this class is also an opportunity for the Department to see how much you have learned and how far you have come as students since you initially began pursuing the Bachelor of Science in Chemistry degree. Please do not be afraid to show how much you have learned and do not hesitate to point out things that you wish you had spent more time on during your undergraduate studies in chemistry.

Student Learning Outcomes

Upon the completion of this course, students will:

1. Be able to search the modern scientific literature and retrieve relevant information as it applies to the topics under discussion.
2. Learn the best strategies for reading and analyzing scientific articles.
3. Discuss scientific concepts in an intelligent, coherent manner.
4. Learn how to constructively evaluate peers work and, in so doing, learn how to improve their own work product.

5. Summarize several different types of information and synthesize comprehensive reviews of advanced technologies and concepts.

These learning outcomes mesh well with the four University Level Competencies (ULCs) that describe the skills Winthrop faculty have outlined for students to develop during their tenure here. These include:

Competency 1: Winthrop graduates think critically and solve problems.

You will be regularly tested on your abilities to read, interpret and apply information that ties together aspects of chemistry as they apply to the scientific topics under discussion.

Competency 2: Winthrop graduates are personally and socially responsible.

You will be expected to work with others in the class, while striving to complete assignments individually. You will learn how to critique and review the work of others in the same respectful, productive manner that you would like to be reviewed yourself.

Competency 3: Winthrop graduates understand the interconnected nature of the world and the time in which they live.

You will gain an appreciation of how your chosen topic includes techniques and theories spanning different disciplines. You will also learn how your topic is applied to everyday life; how your topic translates from lab bench to park bench.

Competency 4: Winthrop graduates communicate effectively.

A major portion of your grade in this course is based upon your ability to present scientific information in both oral and written forms. You will present your findings on a chemical topic you have chosen in a 15-minute presentation that will be graded by your peers. You will also prepare a 15-page review article describing your topic that will be turned in on the last day of class.

Course Specifics:

The course will meet every Tuesday in Sims 108 from 4:00 – 4:50.
There is no textbook, all materials will be provided.

Grading for the Course

A) Chemical Topic Summary

Each student will identify a subject area of chemistry that they find interesting. They will then thoroughly research that subject area during the semester. This topic will be the basis for 4 graded assignments due throughout the course.

- 1) During the final weeks of the semester, students will give a 10 minute oral presentation on their chosen subject area. This presentation will include a clear description of the background of the area, identification of a key journal article or articles in the area from the scientific literature, and explanation of key experiments. Grading rubrics for the presentation will be available on the course website.

- 2) Each oral presentation will be recorded and students will be given a copy of their presentation. Students will be expected to honestly critique their work and propose changes to their presentation styles in an assignment due in the last week of class.
- 3) At the end of the semester, students will write a 7 page review article about their subject area. This article will be due on the last day of the semester. Grading rubrics for the paper will be available on the course website.
- 4) Approximately 3 weeks before the final review paper is due, each student will submit a rough draft of his or her paper. These rough drafts will be randomly assigned to a peer for analysis. Peers will use a common rubric to critique each other's work and offer suggestions for improvement. These critiques will be due on the last day of class. The goal of this assignment is to learn how to offer constructive comments on the work of others and, in turn, learn how to identify similar things in your own work that can be corrected.

Final Grade

Chemical Topic Assignment, Oral Presentation: 50 points

Chemical Topic Assignment, Written: 50 points

Grading Scale:

A: >93% of the total points

A-: 90.0 - 92.9% of the total points

B+: 87 - 89.9% of the total points

B: 83 - 86% of the total points

B-: 80 - 82.9% of the total points

C+: 77 - 79.9% of the total points

C: 70 - 76.9% of the total points

D: 60 - 69.9% of the total points

F: <60% of the total Points

No Late Assignments will be accepted without complete documentation from a physician, judge or member of law enforcement. There are no excuses for late assignments, so please do not even try to make them. If you do not manage your time properly and fail to complete an assignment by the time it is due, you will not receive any points for that assignment. This policy will be strictly enforced. The only acceptable excuses are illness, incarceration or judicial subpoena. You have assignment schedules for all of your courses and it is up to you to determine how to prioritize your efforts.

Technology in the Classroom

No cellular phones may be used when class is meeting. Once class starts, all cellular telephones must be turned to silent mode for the duration of class. Should your cellular telephone ring while the class is meeting, you will be asked only once to silence it. A second violation of this policy will result in immediate removal from that class session. Anyone caught using these devices during class without prior permission will immediately be asked to leave the class. Anyone caught texting, using Facebook or other

forms of social media during class will be immediately ejected from class. This policy is non-negotiable and will be enforced without exception.

Drop Policy: As described in the Winthrop University Undergraduate catalog

Student code of conduct

As noted in the Student Conduct Code: “Responsibility for good conduct rests with students as adult individuals.” The policy on student academic misconduct is outlined in the “Student Conduct Code Academic Misconduct Policy” in the online *Student Handbook* (<http://www2.winthrop.edu/studentaffairs/handbook/StudentHandbook.pdf>).

Syllabus Change Policy

Should any changes be made to this document or to the course itself, students will be notified via email, in person and on the course website.

Students with Disabilities

Winthrop University is dedicated to providing access to education. If you have a disability and require specific accommodations to complete this course, contact Services for Students with Disabilities, at 323-3290. Once you have your official notice of accommodations from Services for Students with Disabilities, please inform me as early as possible in the semester.