

**The University of Texas at El Paso**  
**Department of Chemistry and Biochemistry**  
**Syllabus**

**COURSE INFORMATION**

CHEM 5195/6195: Graduate Seminar

CRN: 14224

Term: Fall 2023

Location: CCSB 1.0204

Meeting Time: Mondays; 4:00 – 5:50 pm

**INSTRUCTOR INFORMATION**

**Instructor:** Dr. Robert Pankow

**Email:** [rmpankow@utep.edu](mailto:rmpankow@utep.edu) **\*\*Please allow 24 hours for a response\*\***

**Phone:** 915-747-7555

**Office:** CCSB 2.0404

**Office Hours:** Immediately following lecture or by appointment.

**COURSE DESCRIPTION**

CHEM 5195/6195 is a 1-credit course. The course is designed to promote professional development. The course includes a wide variety of topics in the areas of scientific information retrieval, research ethics, developing oral presentation skills, and how to prepare written documentation of research results for publication. Intended to develop the students' aptitude in giving an organized and logical oral presentation of chemical sciences to peers, faculty members, or research funding sources.

**Objectives:** Students will learn and develop their skills by selecting a topic, researching the topic, critically analyzing the area, organizing the data, and presenting their findings to a scientifically knowledgeable audience that does not necessarily have in-depth expertise in the selected research area. Students will also acquire an overall understanding of the principles of seminar-based scientific communication, asking questions, defending the data or proposal, as well as participating in discussions and seminar etiquette. Additionally, students will be taught to uphold the best practices in scientific research and integrity and shown strategies for scientific writing and the navigating the publication process.

**Curriculum:** To meet the above objectives, we will cover and practice skills in:

**1. Literature Searching and Management:**

Using scientific literature programs (SciFinder, PubMed, etc.) for researching and critically analyzing a topic or a literature paper. Using citation managers (Zotero, EndNote, etc.) for managing and indexing articles, as well as assisting the writing process.

**2. Presentation Development:**

Using key software for developing a presentation (PowerPoint, ChemDraw, Origin, etc.) and making sure a legible, understandable format is used for slides.

**3. Developing Good Presentation Habits:**

Clear, articulate speaking using scientific/appropriate language, audience engagement, and clock management.

**4. Giving Feedback:**

Teach students the benefits of providing constructive, objective feedback for presentations and connecting it to literature/article reviews.

**5. Scientific & Research Integrity:**

Understanding proper data collection, recording, and analysis procedures using case studies as examples.

**6. Scientific Publishing:**

Approaches and tactics to writing, figure development/design, and navigating the feedback/review process.

**Format:** The beginning of the course will be a traditional lecture format but will include a discussion period allowing students to become directly engaged with the course material. Students are encouraged to bring their laptops to the lecture covering Searching the Scientific Literature (9/11) for troubleshooting any software problems that could arise. Following the lecture on Scientific and Research Integrity, the format will switch from lectures to student presentations (see below for presentation format). Using a feedback rubric, students will note their thoughts/comments regarding the presentation. The presenter will then receive combined feedback from their peers and from Dr. Pankow on the day after their presentation. Students will then use the feedback from the first presentation to refine and polish their second presentation. Before the start of the second presentation series, a lecture will be given detailing general feedback/areas for improvement. This will be based off the feedback received from the students. For the second presentation, students will serve as session chairs by introducing the speakers and moderating the Q&A. The course concludes with a general discussion regarding the presentations, as well as highlighting major conferences to attend and the benefits of networking there.

## **ASSIGNMENTS & GRADING**

**Supplemental Articles:** Throughout the course case studies will be provided, which will cover topics such as giving a presentation, research integrity, and writing up results for publication. Students should read through these to formulate their own thoughts and opinions, which will contribute to the class discussions. *Note, students may be called upon at random to contribute to the discussion.* Reading of the Additional Reference Materials is not required but highly encouraged.

**Presentations:** Students will give topical presentations (17 minutes in length + 3 minutes Q&A) on research articles (*must be focused on an article published within the last 3 years*) from prestigious journals (e.g. *Science, Nature, Journal of the American Chemical Society, Chemical Science, Angewandte Chemie International Edition*) covering the chemical sciences (e.g. analytical/physical chemistry, inorganic/organometallic chemistry, organic chemistry, materials chemistry, biochemistry/chemical biology). The presentations should include: (i) a general introduction and overview of the field and its significance and broader impacts (suggested time: 5

min.); (ii) detail the key findings of the article, identify potential shortcomings, additional experiments needed, or areas for future research (suggested time: 10 min.); (iii) concluding remarks and areas for future work (suggested time: 2 min.). 3 minutes of Q&A will immediately follow the presentation. The second presentation can build off the first by using a new research article in the same area or field. The second presentation should incorporate feedback given regarding the first presentation. **The completed presentation feedback rubric must be submitted to Dr. Pankow via email within 24 hours following the presentation (due Tuesdays at 5:50pm). Late submissions will receive a points deduction.**

**Participation:** In order to develop a learning environment with open discussion regarding the course lectures and student presentations, students are required to engage in the discussions by asking questions and providing comments. During the Q&A sessions for the presentations, students who are not presenting may be called on at random to ask a question or provide a comment regarding the scientific content of the article presented.

**Presentation Feedback:** Feedback will be administered anonymously using a structured rubric to guide the process. Feedback is to be constructive so that students can learn and improve their practices/presentation skills. Feedback that only criticizes and does not provide objective feedback will not be tolerated.

### Grades

F = <50%	D = 50 – 59.9%	C = 60-69.9%	B = 70-79.9%	A = 80-100%
<b>Note:</b> Students need to obtain a grade of C or better to pass this class				

### Distribution of points:

Course Component	Points (out of 120 total)
Class participation	10
Feedback to peers	40
Class presentations	60
Attendance	10

### Presentation Points Breakdown:

Total points available for the first presentation: 15 pts

[Average of peer evaluation (10 pts) + instructor score (5 pts)]

Total points available for the second presentation: 45 pts

[Average of peer evaluation (20 pts) + instructor score (25 pts)]

**Schedule:**

<b>DATE</b>	<b>TOPIC</b>	<b>ASSIGNMENT</b>
8/28	Course Introduction & Overview	none
9/4	<b>LABOR DAY NO CLASS</b>	none
9/11	Searching the Scientific Literature	Read Article 3
9/18	Do's and Don'ts of a Scientific Talk	Read Articles 1-2
9/25	Research & Scientific Integrity	Prep Presentations
10/2	Presentation 1	Feedback Due: 11:59pm
10/9	Presentation 1	Feedback Due: 11:59pm
10/16	Presentation 1	Feedback Due: 11:59pm
10/23	Presentation 1	Feedback Due: 11:59pm
10/30	Feedback for Presentations & Paper Writing	Read Article 4
11/6	Presentation 2	Feedback Due: 11:59pm
11/13	Presentation 2	Feedback Due: 11:59pm
11/20	Presentation 2	Feedback Due: 11:59pm
11/27	Presentation 2	Feedback Due: 11:59pm
12/4	General Feedback and Course Wrap-Up	none

**COMMUNITY AGREEMENT:**

The expectation in this course is that learners participate in course activities and discussions with mutual respect. Participation in this course—whether as an individual or within team-based activities—will be expected to follow our mutually-agreed framework for how we would like to be treated by one another in this course. Examples of our expectations would be offering undivided attention to the person speaking, claiming and distinguishing your opinions, sensitivity to sociocultural context, and disagreement without disrespect.

**ATTENDANCE & ABSENCES:**

Attendance policies follow general guidelines for excusable absences: university-recognized activities, religious holidays, military leave, and medical emergencies. Students are allowed 1 excused absence. Excused absences must be arranged by contacting Dr. Pankow ASAP and providing applicable written documentation. After 3 unexcused absences you will be asked to meet with Dr. Pankow. After the 4th unexcused absence, you may be dropped from the course. *There is no make-up work or extra credit available for this course.*

According to the UTEP Catalog, “At the discretion of the instructor, a student can be dropped from a course because of excessive absences or lack of effort. A grade of “W” will be assigned before the course drop deadline and a grade of “F” after the course drop deadline.” See Policies and Regulations in the UTEP Undergraduate Catalog for a list of excuse absences. Therefore, if I find that, due to non-performance in the course, you are at risk of failing, I will drop you from the course. I will provide 24 hours advance notice via email.

### **TARDINESS:**

If you are late to the lecture, please enter quietly so as not to disturb others; any missed engagement points are not available to make up. If you are >10 minutes late for class, points will be subtracted from your attendance score.

### **ARTICLES FOR CASE STUDIES:**

#### **1. The Schon Scandal:**

- <https://www.nytimes.com/2002/05/23/us/similar-graphs-raised-suspicions-on-bell-labs-research.html>
- J.H Schon *et al.* “Ambipolar Pentacene Field-Effect Transistors and Inverters” *Science* **2000**, 287, 1022-1023. DOI: 10.1126/science.287.5455.10
- J.H Schon *et al.* “Ambipolar Super Conducting Field Switch” *Science* **2000**, 288, 656-658. DOI: 10.1126/science.288.5466.656

#### **2. The Bengü Sezen Scandal:**

- <https://www.science.org/content/blog-post/sames-sezen-fraud-case-holy-cow>
- <https://www.nytimes.com/2006/03/16/science/professor-at-columbia-retracts-papers-over-research-questions.html>
- Bengu Sezen *et al.* “C–C Bond Formation via C–H Bond Activation: Catalytic Arylation and Alkenylation of Alkane Segments” *J. Am. Chem. Soc.* **2002**, 124, 13372-13373. DOI: 10.1021/ja027891q
- Bengu Sezen *et al.* “Selective and Catalytic Arylation of N-Phenylpyrrolidine: sp<sup>3</sup> C–H Bond Functionalization in the Absence of a Directing Group” *J. Am. Chem. Soc.* **2005**, 127, 5284-5285. DOI: 10.1021/ja050269o

#### **3. Scientific Presentations**

- C. J. Hawker “Editorial: Effective Presentations—A Must” *Angew. Chem. Int. Ed.* **2013**, 52, 3780-3781. DOI: 10.1002/anie.201209795

#### **4. Scientific Writing:**

- G.M. Whitesides “Whitesides' Group: Writing a Paper” *Adv. Mater.* **2004**, 16, No. 15. DOI: 10.1002/adma.200400767

### **ADDITIONAL REFERENCE MATERIALS:**

- Introduction to Giving a Seminar (Prof. Rich G. Carter, Oregon State University) [http://oregonstate.edu/dept/chemistry/carter/sites/default/files/theses/seminar\\_guidelines.pdf](http://oregonstate.edu/dept/chemistry/carter/sites/default/files/theses/seminar_guidelines.pdf)
- Seminar on Seminars: How to Give A Talk (Prof. Kenneth S. Suslick, Univ. of Illinois) <http://www.scs.illinois.edu/suslick/seminars.html>
- The ACS Style Guide - Effective Communication of Scientific Information <http://pubs.acs.org/isbn/9780841239999>
- The Craft of Scientific Presentations, Michael Alley, Springer - Verlag, New York, ISBN: 0387955550, Publication Date: 2008
- Edward R. Tufte “Envisioning Information,” “The Visual Display of Quantitative Information,” “The Cognitive Style of PowerPoint: Pitching Out Corrupts Within”

- Mark Schoeberl and Brian Toon  
[http://www.cgd.ucar.edu/cms/agu/scientific\\_talk.html](http://www.cgd.ucar.edu/cms/agu/scientific_talk.html)
- Prog Clin Biol Res. 1989;319:663-4. How to give a scientific talk., New York., PMID: 2622932 [PubMed - indexed for MEDLINE]
- How to give a dynamic scientific presentation <https://www.elsevier.com/connect/how-to-give-a-dynamic-scientific-presentation>
- Scientific presentations: A cheat sheet  
<http://blogs.nature.com/naturejobs/2017/01/11/scientific-presentations-a-cheat-sheet/>

### **INCOMPLETE GRADE POLICY**

Incomplete grades may be requested only in exceptional circumstances after you have completed at least half of the course requirements. Talk to me immediately if you believe an incomplete is warranted. If granted, we will establish a contract of work to be completed with deadlines.

### **ACCOMMODATIONS POLICY**

The University is committed to providing reasonable accommodations and auxiliary services to students, staff, faculty, job applicants, applicants for admissions, and other beneficiaries of University programs, services and activities with documented disabilities in order to provide them with equal opportunities to participate in programs, services, and activities in compliance with sections 503 and 504 of the Rehabilitation Act of 1973, as amended, and the Americans with Disabilities Act (ADA) of 1990 and the Americans with Disabilities Act Amendments Act (ADAAA) of 2008. Reasonable accommodations will be made unless it is determined that doing so would cause undue hardship on the University. Students requesting an accommodation based on a disability must register with the [UTEP Center for Accommodations and Support Services](#) (CASS). Contact the Center for Accommodations and Support Services at 915-747-5148, or email them at [cass@utep.edu](mailto:cass@utep.edu), or apply for accommodations online via the [CASS portal](#).

### **SCHOLASTIC INTEGRITY**

Academic dishonesty is prohibited and is considered a violation of the UTEP Handbook of Operating Procedures. It includes, but is not limited to, cheating, plagiarism, and collusion. Cheating may involve copying from or providing information to another student, possessing unauthorized materials during a test, or falsifying research data on laboratory reports. Plagiarism occurs when someone intentionally or knowingly represents the words or ideas of another as ones' own. Collusion involves collaborating with another person to commit any academically dishonest act. Any act of academic dishonesty attempted by a UTEP student is unacceptable and will not be tolerated. All suspected violations of academic integrity at The University of Texas at El Paso must be reported to the [Office of Student Conduct and Conflict Resolution \(OSCCR\)](#) for possible disciplinary action. To learn more, please visit [HOOP: Student Conduct and Discipline](#).

### **COPYWRITE STATEMENT FOR COURSE MATERIALS**

All materials used in this course are protected by copyright law. The course materials are only for the use of students currently enrolled in this course and only for the purpose of this course. They may not be further disseminated.

## **COVID-19 PRECAUTIONS**

Please stay home if you (1) have been diagnosed with COVID-19, or (2) are experiencing COVID19 symptoms. If you are feeling unwell, please let us know as soon as possible. The Center for Disease Control and Prevention recommends that people in areas of substantial or high COVID19 transmission wear face masks when indoors in groups of people. The best way that Miners can take care of Miners is to get the vaccine. If you still need the vaccine, it is widely available in the El Paso area, and will be available at no charge on campus during the first week of classes. For more information about the current rates, testing, and vaccinations, please visit [epstrong.org](http://epstrong.org)

## **COURSE RESOURCES:**

Where you can go for assistance. UTEP Provides a variety of student services and support:

### **Technology Resources**

- [Help Desk](#): Students experiencing technological challenges (email, Blackboard, software, etc.) can submit a ticket to the UTEP Helpdesk for assistance. Contact the Helpdesk via phone, email, chat, website, or in person if on campus.

### **Academic Resources**

- [UTEP Library](#): Access a wide range of resources including online, full-text access to thousands of journals and eBooks plus reference service and librarian assistance for enrolled students.
- [University Writing Center \(UWC\)](#): Submit papers here for assistance with writing style and formatting, ask a tutor for help and explore other writing resources.
- [Math Tutoring Center \(MaRCS\)](#): Ask a tutor for help and explore other available math resources.
- [History Tutoring Center \(HTC\)](#): Receive assistance with writing history papers, get help from a tutor and explore other history resources.
- [RefWorks](#): A bibliographic citation tool; check out the RefWorks tutorial and Fact Sheet and Quick-Start Guide.

### **Individual Resources**

- [Military Student Success Center](#): Assists personnel in any branch of service to reach their educational goals.
- [Center for Accommodations and Support Services](#): Assists students with ADA-related accommodations for coursework, housing, and internships.
- [Counseling and Psychological Services](#): Provides a variety of counseling services including individual, couples, and group sessions as well as career and disability assessments.