Department of Chemistry
The University of Texas at El Paso
(Contemporary Topics in Physical Chemistry)
Scientific Writing and Communication

CHEM 5359 / 6359 (CRN 28864 / 26961) Spring Term, 2022
CHEM 4376 (CRN 28865)
Instructors: Prof. Lela Vuković & Prof. Elizabeth Day
Class meetings: Health Science/School of NURS 216, Tue, Thu from 12 pm to 1:20 pm
Email: Lvukovic@utep.edu ; elday@utep.edu
Phone: (915) 747-7551
Office hours: by appointment. Please contact the instructor via Teams or email to arrange a meeting. Dr. Vukovic will also often be available in her office on Tue ~10:40 am to ~11:40 am, but it is better to announce yourself via email/Teams in case she otherwise steps out to her lab.

Course Description

The objective of this course is for students to learn about and develop good practices in scientific writing and communication. A large part of the course is based on student writing and presenting exercises, peer review (in person discussion and via written reports), and implementation of feedback. *The course requires intensive writing on scientific topics independently selected by students themselves.*

Course Assignments

- Develop your CV (week 1)
- Write several sections of a scientific manuscript based on your own research results (weeks 2 – 6)
- Develop key sections of a scientific proposal based on your own research topic (weeks 6 – 12)
- Prepare a presentation based on your proposal or manuscript and present in class (weeks 13 – 16)

Attendance: **mandatory and recorded**. However, the class will not meet on all dates – some days will be designated for writing and written peer review instead.

Recommended reading:

Joshua Schimel. Writing Science: How to write papers that get cited and proposals that get funded.

Grading:

The grade will be determined by:

- Attendance, participation in class peer review discussions and in the written peer review 30%
  (this category also includes bringing printouts of your writing samples to class and completing reading prior to class discussions when assigned)
- Final CV (10%)
- Final paper (20%)
- Final proposal (20%)
- Presentation (20%)

Selection of Assignment Topics

All students need to select their own topics for each assignment.

Undergraduate students: for a manuscript, undergraduate students should either: a) select a topic based on independent research they are involved in (strongly preferred), or b) select a topic and the results based on a significant experiment they performed in one of the advanced undergraduate labs. For the proposal, students

will write their own National Science Foundation Graduate Research Fellowship Program application. There may be a flexible option to write a personal statement for graduate school and a scholarship application in lieu of the proposal, however this decision will be done on a case-to-case basis and after a discussion between the student and the instructor. Every student needs to consult with the instructors to confirm topic selections.

Graduate students: for a manuscript, it is expected that each student will write a manuscript based on their graduate research. For the proposal, the topic should be either: a) an extension of the present research (e.g. a direction that the main project will anyways be going towards, so that the written proposal can be a part of the proposal A document), or b) an independently selected topic that could contribute to the proposal B document or become an application for a postdoctoral fellowship. Every student needs to consult with the instructors to confirm topic selections.

This course should be useful to:

- students who are doing research and are starting to draft a manuscript based on their data
- students working on their research proposals as a part of their graduate programs (Master/PhD thesis, proposals that are parts of graduate programs)
- students who are writing their own applications for funding (for example, scholarship applications, NSF Graduate Research Fellowships, graduate students applying for postdoctoral fellowships)
- students who are developing their applications for graduate school

Course Drop Policy: Drop date deadline is of April 1st, 2022. All grades of Incomplete must be accompanied by an Incomplete Contract that has been signed by the instructor of record, student, departmental chair, and the dean. Although UTEP will allow a maximum of one year to complete this contract, the College of Science requests it be limited to month based upon completion data. A grade of Incomplete is only used in extraordinary circumstances confined to a limited event such as a missed exam, project, or lab.

Other considerations: Some aspects of the course may be changed, depending on the progress and conditions during the semester.

Disability. If you have a disability and need classroom accommodations, please contact The Center for Accommodations and Support Services (CASS) at (915) 747-5148, or by email to cass@utep.edu, or visit their office located in UTEP Union East, Room 106. For additional information, please visit the CASS website at https://www.utep.edu/student-affairs/cass/

COVID-19 PRECAUTION STATEMENT

Please stay home if you have been diagnosed with COVID-19 or are experiencing COVID-19 symptoms. If you are feeling unwell, please let me know as soon as possible, so that we can work on appropriate accommodations. If you have tested positive for COVID-19, you are encouraged to report your results to covidaction@utep.edu, so that the Dean of Students Office can provide you with support and help with communication with your professors. The Student Health Center is equipped to provide COVID-19 testing.

The Center for Disease Control and Prevention recommends that people in areas of substantial or high COVID-19 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.

Week	dates	topic for in-class lecture	order of the class activities	in-class exercise	homework - after that class	Reading
1a	18-Jan	welcome and syllabus	course intro, syllabus discussion, everyone introduces themselves	N/A	Your Ten-Year Plan for a Remarkable Life (due 01/25, sign in person that you did it, not turn it in), write your initial CV bring printouts to next class)	
1b	20-Jan	Writing CV, overview, examples - the good, the not so good	slides + examples, then in-class peer reviews of CV documents	in class review of 2 volunteer CV documents	same as 1a, and revise your CV (due 01/25), **choose your paper topic** - email instructors to confirm (due 01/25 before class)	read paper 1 - to be ready for next time in class analysis
2a	25-Jan	1) How to peer review; 2) what is a scientific paper - form and content organization; examples of good methods / results	slides, then analysis/ review of paper 1 methods and results sections	analysis/review of methods, results sections of paper 1	**make sure your topic/vision statement is approved by instructors by 01/27**	reread paper 1, especially intro, discussion, abstract, to be ready for in-class analysis
2b	27-Jan	N/A	continue paper 1 analysis together	group analysis/ review of intro, discussion, abstract sections of paper 1	write your own methods section (due 02/01)	
3a	1-Feb	N/A	peer review	peer review of methods - in class discussion	write your results (2 figures and 2 sections), revise methods, send to peers for written review (by 02/03)	
3b	3-Feb	no meeting - written peer review on methods, do figure/table and writing results				
4a	8-Feb	cover bibliography & how to do practical examples - mendeley+Word	peer review, then slides	peer review of students results sections	write introduction - 1 page single spaced (and bibliography) & abstract (due on 02/15), revise results and send to peers for written review (by 02/10)	
4b	10-Feb	no meeting - writing / revision day				reread paper 1 discussion for next class
5a	15-Feb	N/A	peer review	peer review of abstracts and introductions	write discussion (3/4 page single spaced), revise introduction & abstract (due 02/17)	
5b	17-Feb	intro of what we do and what is due	peer review mostly	peer review of students discussion sections, we all do one volunteer together, then we split into groups of 3 and they review each others	revise your papers, send to assigned peers by 02/20, peers return feedback by 02/22 - complete final paper by 02/24 end of day	
6a	22-Feb	no meeting - day for writing & reviewing tasks			final revised paper due to instructors by 02/24 end of day	Watch video about writing NIH R01 proposal: https://www.youtube.com/watch?v=3Pdegl9uZ38
6b	24-Feb	Proposals - NSF formats, NIH formats, sections examples	mostly slides		**choose proposal topic** (email instructors and resolve by 03/01 before class)	read example specific aims of NIH proposal / NSF project summary by the next class; read NSF&NIH proposals by next class
7a	1-Mar	Proposals: How to formulate hypothesis and specific aims / objectives suitable for NIH or NSF proposals	slides then analyses	analyze example proposals -only hypothesis/specific aims	write your hypothesis & two or three specific aims / objectives	re-read example proposals - whole to help you craft your task
7b	3-Mar	N/A	slides, then peer review	peer review of hypothesis & specific aims / objectives	write Specific Aims or Project Summary full page	
8a	8-Mar	no class, day for writing & written peer review and feedback implementation				
8b	10-Mar	How to prepare significance & innovation sections (NIH), and Background (NSF)	slides, then peer review	peer review of specific Aims / Project summary pages	write Significance & Innovation or Background section	read proposal examples with significance and innovation and background sections
9-SPRING						
10a	22-Mar	N/A	peer review in person	peer review significance, innovation (NIH) OR background (NSF)		
10b	24-Mar	Overview of Preliminary Results & Approach	slides and examples	group review of example proposals	write your own preliminary results (if any) and approach for ONE of the aims (only approach, if working on a new idea)	read proposal examples with preliminary results and proposed approach
11a	29-Mar	no class - writing day				
11b	31-Mar	N/A		in class peer review of prelim results and approach		
12a	5-Apr	no class, extensive written peer reviews work		written peer reviews on all sections of the proposal		
12b	7-Apr	NO class - revision day - final proposals due to be turned in to instructors by 4/10 end of day)				
13a	12-Apr	How to make good presentations - overview of good practices, examples			make first first half of slides, sign up for presentations	7 tips for making presentations: https://ruthjohnson95.github.io/posts/2018/10/prsentation-tips/
13b	14-Apr	N/A		group analysis	add feedback, and finish slides	
14a	19-Apr	Either: continuing peer review analyses of slides or no class to finish slides				
14b	21-Apr			group analysis of slides	add feedback	
15a	26-Apr	Student - presentations		everybody grades based on rubric		
15b	28-Apr	Student - presentations		everybody grades based on rubric		
16a	3-May	Student - presentations		everybody grades based on rubric		
16b	5-May	Student - presentations		everybody grades based on rubric		