

Course Syllabus 509

Instructor

Ive Hermans

Office: Room 6311 Chemistry

email: hermans@chem.wisc.edu

lectures

Wedn & Fri, 9:55 in Chem B379

2 credit points

Introduction. Senior Seminar provides an integrative experience that requires students to synthesize the knowledge and skills that have been introduced across the Chemistry curriculum. You will learn to search the vast scientific literature and how to propose working hypotheses and strategies to falsify those hypotheses. The course covers a series of presentations by faculty members. These talks cover a broad range of chemistry topics. You will learn how faculty chose research projects and why these projects are of interest to them. As you listen to these talks you will identify specific research challenges. Groups of students will be formed and assigned the task of using the chemical literature to identify routes to the solutions of important problems, presenting their findings both in class presentations and written assignments.

Learning Outcomes. The learning outcomes of this course include building teamwork, communication, and assessment skills, in addition to searching the scientific literature and formulating scientific working hypotheses. This course will advance your ability to articulate questions that will help advance your chemistry knowledge. You will gain an understanding of the connection between the Chemistry curriculum and how its mastery allows you to begin to tackle complex chemical problems. You will learn how to read the chemical literature critically and use it to advance your understanding of chemistry. You will learn the importance of identifying research ethics and safety precautions

Course Organization and Expectations. Class meets twice weekly with discussion on Wednesday and presentations on Friday. Two important components of the course are faculty presentations and the follow up discussions. You will have the opportunity to learn about cutting edge research from UW Chemistry faculty. The talks will allow ample time for questions. You are responsible for engaging the speakers and articulating questions that enable you to advance your understanding. Your questions should include identifying any research ethics or safety precautions that are relevant to research being performed. In contrast to professional research talks, the faculty will emphasize the factors that influence the research focus and the skills needed to carry out research from conception to publication. Speakers will provide reading material prior to each presentation. We expect you to read this material to come prepared to the lecture. Each Wednesday 'Discussion' following a faculty presentation begins with a 15 minute overview presented by a group of 2-3 students. These students will lead the discussion.

You will be expected to draw upon your undergraduate chemistry experience to identify and to propose a solutions to a chemistry research challenge of your choice (select your topic by 03/06). Working in groups of two or three you will consult with

graduate students and perform literature searches in order to come up with viable strategies for the solutions to identified problems. Collaborative group work is a central component of the course, and there are several opportunities to enhance your collaborative working skills.

Each team will have the opportunity to present how they intend to solve the research challenge on 03/29 and get feedback from their peers as they are preparing their proposal. The small class size will enable us to present and critique work in a relaxed setting. On 04/03 you will be given more time to discuss your proposal with your peers and graduate students/postdocs.

In addition to an oral presentation you will write a 7-10 page paper outlining your proposed research. Teams should submit a first draft of their research paper by 04/12. The draft should include a brief description of how each member of the team contributed to the final product. A final version of the paper is due by 05/01.

Course Grade. The grade for this course will be based on the total number of points received in the class. The points are allocated as follows:

Activity	Points
Short presentation of research proposal	10
Oral presentation (final)	30
Research paper draft	10
Research paper	30
Class participation	20

The letter grade associated with the total points is

Grade	Points
A	92-100
AB	87-91
B	80-86
BC	76-79
C	70-75
D	60-70
F	0-59

McBurney Disability Resource Center syllabus statement: "The University of Wisconsin-Madison supports the right of all enrolled students to a full and equal educational opportunity. The Americans with Disabilities Act (ADA), Wisconsin State Statute (36.12), and UW-Madison policy (Faculty Document 1071) require that students with disabilities be reasonably accommodated in instruction and campus life. Reasonable accommodations for students with disabilities is a shared faculty and student responsibility. Students are expected to inform faculty [me] of their need for instructional accommodations by the end of the third week of the semester, or as soon as possible after a disability has been incurred or recognized. Faculty [I], will work either directly with the student [you] or in coordination with the McBurney Center to identify and provide reasonable instructional accommodations. Disability information, including instructional accommodations as part of a student's educational record, is confidential and protected under FERPA."

Diversity and Inclusion

Institutional statement on diversity: "Diversity is a source of strength, creativity, and innovation for UW-Madison. We value the contributions of each person and

respect the profound ways their identity, culture, background, experience, status, abilities, and opinion enrich the university community. We commit ourselves to the pursuit of excellence in teaching, research, outreach, and diversity as inextricably linked goals.

The University of Wisconsin-Madison fulfills its public mission by creating a welcoming and inclusive community for people from every background – people who as students, faculty, and staff serve Wisconsin and the world.” <https://diversity.wisc.edu/>

Mental Health Resources:

I realize you are under a lot of pressure. Some of that pressure is internal and some of that is external. Regardless of the source of the pressure, the pressure is very real. Students have a tendency to equate grades with future happiness. It is an understandable connection, but not necessarily a true one. We have had a student that received an F in organic chemistry and had to retake the class. She is now in medical school. So, a low grade is not the end of the world.

If disaster happens or at anytime you feel that you cannot cope with something, or just need to vent, there are resources available on campus for you. Take advantage of them.

University Health Services (UHS): Offers group, individual, couple/partner

therapy stress management, and disordered eating assessments and treatment at no cost. It also provides massage therapy, yoga, and other

wellness services. Student Activity Center 7th floor 608-265-5600

www.uhs.wisc.edu/mentalhealth/getting-started

Ask.Listen.Save is a student org that aims to prevent suicide by reducing the stigma of mental illness. Through educating the student body, they aim to increase the awareness and create a safe environment in which students know they are not alone and can feel free to ask for help. Student Activity Center Suite 3196 www.Asklistensave.org

Badgerspill: is a peer-to-peer support network of and for UW-Madison students. You can write in online to "spill" or vent privately about whatever you are going through and get unbiased feedback, empathy, and resources from other students who have dealt with similar situations. Both parties are anonymous to one another and the spiller gets multiple responses within 24 hours. www.badgerspill.com