

Course Syllabus

SCED 204: Matter and Energy in Chemical Systems

COURSE OVERVIEW AND LEARNING GOALS

This is a student-centered, discussion oriented chemistry course intended for students pursuing a career in K-8 teaching. The course has four major learning goals:

- 1) *Chemistry content.* Students develop deep understanding of basic chemistry concepts and reasoning in order to explain everyday phenomena.
- 2) *Learning about learning.* Students develop awareness of how their own ideas change and develop, and how the structure of the learning environment and curriculum facilitates these changes.
- 3) *Nature of science.* Students develop understanding of how knowledge is generated within a scientific community, with an emphasis on the development and use of models to explain and predict phenomena.

As an LSCI GUR, this course also fulfills the following GUR competency:

Use quantitative and scientific reasoning to frame and solve problems

WHAT TO EXPECT DURING CLASS MEETINGS

This is a lab-based course in which students alternate between working through guided activities in small groups and participating in full class discussions. During the small group work, you will make predictions, conduct experiments, complete exercises, and work with computer simulations. During all of these activities, you are expected to discuss your ideas with your partners. The full class discussions will allow you to check, verify, and perhaps modify the ideas from your small group work. Learning is thus student directed, and achieved through collaboration and consensus. *There is little or no lecturing.* Instead, the instructor will act as a “learning coach,” providing guidance and facilitating your work. The curriculum is designed for you to take charge of your own learning. I hope that you, as a learner, are excited about this approach, but recognize that it may also be scary and/or frustrating at first. I hope you will find that many of the learning and teaching strategies employed in this course are valuable and appropriate for you to use when you begin your teaching career.

ATTENDANCE AND PARTICIPATION POLICIES

Missing a Class: Because this is a hands-on, collaborative, inquiry based class, a missed class cannot simply be made up by getting the notes from a peer or the instructor. Because of this, **attendance is required** unless you have a valid excuse *and* have communicated with the course administrator (via phone or email) PRIOR to class.

Valid reasons include:

- If you are ill and don't feel well enough to participate in class and/or are contagious,
- A planned trip away from campus that is associated with a school organization (e.g., you are a WWU soccer player traveling to a game in Ellensburg), or
- A family emergency (a letter from the Office of Student Life documenting that the student's absence from the university is excused will need to be provided after the fact.)

Reasons that are not valid include:

- A family vacation for which your plane ticket was already purchased, □ A dentist appointment,
- Going to the office hours of the instructor for one of your other classes, etc.

Each unexcused absence will drop your course grade by 3%. If you have more than 3 absences, excused or unexcused, you will not be able to pass the class. If you do miss a class, you must make up the work prior to the next class period, and assigned homework is still due at the assigned time unless otherwise agreed upon with your instructor.

Late arrivals: Due to the intensely collaborative nature of this class, it is imperative that everyone arrives to class on time ready to go. Late arrivals are unacceptable and will negatively impact your grade. Each time you are late to class points will be deducted from your attendance grade. You must call/email in advance and/or have a valid emergency for a late arrival to be excused.

Cell phone use: Please do not use cell phones during class. This includes text messaging. Repeated cell phone use during class will result in deduction of participation credit.

Internet Usage: You need to be able to access the course website as well as use the internet for assignments. Internet access is available in a number of computer labs on campus.

Academic Integrity Cheating, plagiarism, etc., will not be tolerated. All work you submit for the course should be your own. Students who cheat or plagiarize, or who knowingly help another to cheat will receive a minimum of zero on that assignment and may fail the course.

ASSIGNMENTS AND GRADING POLICIES

Participation (30%). You will be generating your own knowledge and understanding in this course. Active engagement is essential, both during small group work and during full class discussions. Active engagement includes asking questions, responding to questions of other students, and offering your own ideas. Participation credit is assigned on the basis of contributions of these types. Some other ways that participation credit will be assigned include: self and peer evaluations of the level of participation during in-class work, completing surveys and questionnaires, and possible checks during the course of the workbook for being complete and up to date.

Your participation grade will be based on:

- Active participation in small group discussions (and evaluation by your small group peers). Do you actively contribute to group work? Are you engaged with your peers?

- Active participation in class discussions (do you pose clarifying questions to the class? Paraphrase what other say? Ask for help from the class when you are confused? Share what you do understand?)
- Up-to-date and complete workbook during course, self and peer evaluations

Awarding participation points: You will be awarded 100% of the participation points if you are a strong leader both in small group and in classroom discussions. If you are a good active participant in both, you will receive 95%. If you are stronger in one than the other, you may receive 90%. If your only contribution to the class discussions is to present your whiteboard, then your participation grade will not be higher than 85%. Lower points are possible. If this is the case, you will be given notice during the quarter by the instructor.

Homework (20%). Written homework will be assigned after most class periods. Some assignments will consist of applying the concepts and reasoning developed in class to new situations, or extending those concepts. In other cases, you will be asked to reflect in writing on your learning and understanding. Due dates will be announced in class. All assignments are due at the beginning of class. Late work will be accepted for a 10% deduction up to 24 hrs late, and a further 10% deduction up to 48 hrs late. After that, no late work will be accepted.

Chapter quizzes (40%). All quizzes are closed book. Since the course is largely self-paced, dates of quizzes cannot be announced in the syllabus. Quiz dates will be announced ahead of time in class.

Learning commentaries (10%). These will be due at the end of each chapter (3 total) on the day of the chapter quiz and will have specific instructions (see Canvas). Their purpose is for you to reflect on how your ideas about a specific chemistry concept have changed over the course of the chapter, and what caused those ideas to change.

Online pre and post-assessment (required, but ungraded, component of class). This course has online pre- and post-class surveys that must be completed in order to receive your final grade. The purpose is to see how your understanding of class material and your attitudes about science change from the beginning to end of the course. See Canvas for links to the surveys.

OTHER IMPORTANT NOTES

Reasonable Accommodation

Reasonable accommodation for persons with documented disabilities should be established within the first week of class and arranged through Disability Resources for Students: telephone 650-3083; email drs@wwu.edu; and on the web at <http://www.wwu.edu/depts/drs/>

Student Services

Western encourages students to seek assistance and support at the onset of an illness, difficulty, or crisis.

- In the case of a medical concern or question, please contact the Health Center: 650-3400 or www.wvu.edu/chw/student_health/
- In the case of an emotional or psychological concern or question, please contact the Counseling Center: 650-3400 or www.wvu.edu/chw
- In the case of a health and safety concern, please contact the University Police: 650-3555 or www.wvu.edu/ps/
- In the case of a family or personal crisis or emergency, please contact the Office of Student Life: 650-3706 or http://www.wvu.edu/dos/office/slo_student_assistance.shtml

INTEGRITY

As a community, Western is committed to integrity in all aspects of academic and campus life. An excellent resource for guiding students is Western's newly created Integrity website. (See <http://www.wvu.edu/integrity/>) This site is a clearinghouse of resources that encourages and educates about integrity. Besides covering more common problems related to academic integrity, such as plagiarism and cheating on exams, it also addresses ambiguous areas, such as collaborative work, the use of language translators, and submitting the same paper in different classes. In addition to this site, the University Catalog in Appendix D—Academic Honesty Policy and Procedure—delineates rights and responsibilities. (<http://catalog.wvu.edu/content.php?catoid=10&navoid=1794>)

COURSE GRADES

You final grade will be based on the following components and weighting:

Homework: 20%

Chapter Quizzes: 40%

Learning commentaries: 10%

Participation: 30%

The scale is as follows:

93-100% A	83-86.9% B	73-76.9% C	63-66.9% D
90-92.9% A-	80-82.9% B-	70-72.9% C-	60-62.9% D-
87-89.9% B+	77-79.9% C+	67-69.9% D+	< 60% F

FINAL COMMENT

The emphasis of this course is learning through collaboration and consensus—a method proven effective by extensive research and the way we hope you will teach. The approach may be different than science courses you have taken previously. Importantly, mutual respect for everyone is a key to ensuring a safe learning environment in which all students thrive. If you aren't sure why I am doing what I am doing, or have concerns about anything related to the course, don't hesitate to ask! I am interested in talking to you about chemistry concepts, the nature of learning and teaching, and your personal experience in the class.

This syllabus is subject to change. Changes, if any, will be announced in class. Students will be held responsible for all changes announced in class.