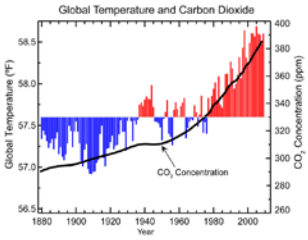
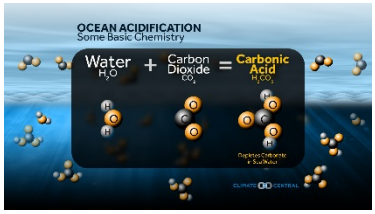
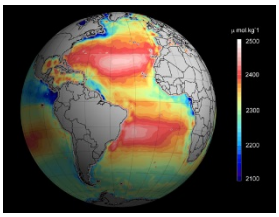
University of Wisconsin-Stevens Point

Welcome to

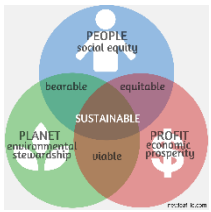
Chem 100: Chemistry for the Citizen











Lecture:

Tuesday and Thursdays, 11:00 – 11:50 AM. CBB 105

Instructor: Dr. Dave Snyder

Office Location: CBB 445

Office Phone: (715) 346-2155

email: dasnyder@uwsp.edu

Laboratory:

Section 2: Wednesday, 8:00 – 10:50 AM, CBB 220

Section 3: Monday, 2:00 – 5:00 PM, CBB 220

Section 4: Tuesday, 2:00 – 5:00 PM, CBB 220

Instructors: Mr. Gary Shulfer and *Mr. Gary Lueck*

Please come and see us or contact us with your questions or concerns!

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About the Instructor

My name is Dr. Dave Snyder, and I'm excited about the opportunity to work with you this fall. I teach courses in general and analytical chemistry here at UWSP (CHEM 100, 105, 106, 248, and 446) and conduct air pollution-related research with a small group of students each semester. I love teaching and interacting with my students, and I hope that you will enjoy being in my class. This course will be challenging, but please be assured that I will be there to support you and guide you along the way.

What is this course all about?

Chemistry is not just about beakers and Bunsen burners. Chemistry is the study of the substances that make up our world, from the technology we use to the air that we breathe, so a better understanding of our world and the challenges we face requires a better understanding of chemistry. I teach this class with the assumption that you know little or nothing at all about chemistry. The purpose of this class is not to make you chemists, but to provide you with some appreciation of the science of chemistry and to help you connect chemistry with your everyday life and challenges and opportunities chemistry can present in our technologically advanced and rapidly changing world. Some students walk into a chemistry class with preconceived notions about chemistry being a "hard" class and a difficult science to learn. Please try and leave these notions at the door when you walk into class each day - embrace the possibility that that they are untrue instead. In my opinion, what is required to learn *any* science is an open mind and a sense of wonder. Armed with these things, I think you will find that gaining an appreciation of chemistry is not as hard as you may think.

Learning Outcomes 

After successful completion of this course, you should be able to:

- Describe the particulate nature of matter
- Describe how the shape and composition of matter is related to its chemical and physical properties
- Explain the basic principles of sustainability
- Evaluate claims regarding human and environmental challenges using chemical knowledge
- Examine how chemistry can both help and hinder sustainable practices

Inclusive Excellence

I recognize that students in my classroom may have diverse racial, ethnic, cultural, and religious backgrounds, sexual orientations and gender identities. I further recognized that students in my

classroom may face unique challenges due to health conditions, family obligations, current or past military service, and other situations that may result in significant obstacles to learning.

I am committed to providing a civil, respectful, and equitable classroom where all my students have the opportunity to succeed and feel safe and valued. I believe diversity should be celebrated and embraced because it helps to create an optimal environment for shared inquiry and the development of sophisticated graduates who recognize the value of diversity and human dignity.

I welcome your suggestions and ideas on how we can create and maintain an inclusive and equitable learning environment during the semester.

Course Format

Lecture

Lecture periods will be a mixture of traditional lecture and cooperative group learning.

Traditional Lectures

You should take careful notes during lecture and should feel free to ask questions at any point during the lecture. You will be given a brief homework/reading assignment to complete before each lecture period. A short quiz will be given at the end of some lecture periods covering the contents of lecture and the reading assignment. These quizzes will be open book and open note.

Cooperative Group Learning

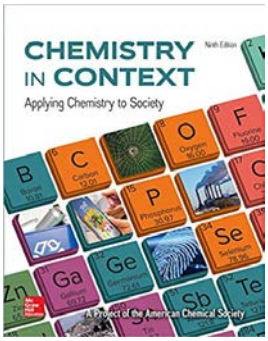
During some lecture periods, you will be working as a group to help each other learn the assigned material. I suspect that many of you may have objections to group learning, but I am going to ask you to set these objections aside and give the process a chance to work. I think you will find that I have addressed many of your objections and hope that you will have some fun working and learning cooperatively. Your first group learning exercise will take place on the second day of class (Thursday, September 6). I will be assigning groups on that day, so it is vitally important that you attend class on Thursday and meet with your group. Additionally, I will be providing you with material describing how the group learning process will work at that time.

Laboratory

Lab periods will provide you with the opportunity to make observations, engage in scientific reasoning, interact directly with natural phenomena, use scientific tools, and learn to record, analyze, and report scientific data and results. Getting the most out of lab requires that you be punctual, attentive, and curious. It is also critical that you come to lab prepared, so please read lab procedures thoroughly before attending lab. Laboratory reports are due at the beginning of the following lab period.

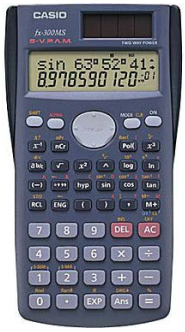
Learning Resources and Required Materials

Textbook



Chemistry in Context: Applying Chemistry to Society, American Chemical Society, 9th ed. *Available through text rental at the University Store*

Scientific Calculator



You will need a scientific calculator. It does not have to be a fancy, expensive one. My trusty Casio fx-300 ES solar (shown at left) costs $11.49 at Staples, got me through college and graduate school, and never needs new batteries!

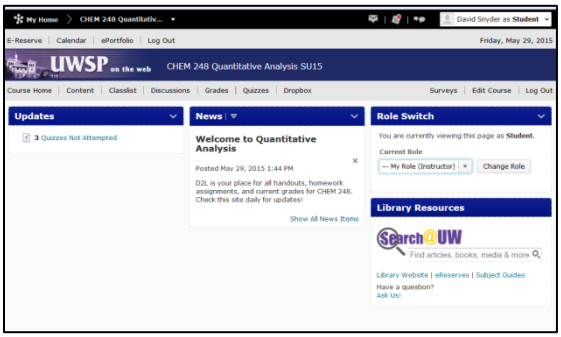
Lab Goggles

Lab goggles (not glasses) are required for all laboratory experiments and are available for sale at The University Store/ Text Rental. If you are planning on taking many lab courses, purchasing a pair of quality goggles will be a good investment. The Student Chapter of the ACS will have goggles for sale sometime during the semester.

A Stapler

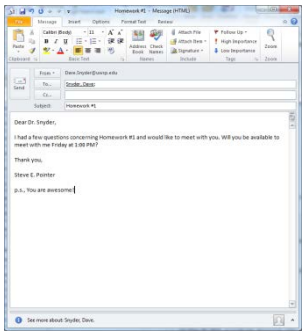
Please by a stapler! 1 point will be deducted from each lab report or homework assignment that is not stapled (note: I do mean stapled – not dog-eared, paper-clipped, or fastened with anything other than a staple). Do not rely on the instructor to have a stapler available for you to use.

D2L Course Site



All course documents, including assignments, rubrics, the syllabus, and other supporting material, can be found on the course D2L site (login at https://uwsp.courses.wisconsin.edu). Your exam, quiz, assignment, and lab grades, along with your overall course grade, can be found on this site as well. I will post content and update grades almost every day, so be sure to check D2L often.

E-Mail



Please feel free to email me at dave.snyder@uwsp.edu if you have any questions or concerns during the semester. While I may not be able to reply to your messages instantly, I will do my best to reply as quickly as possible. Email messages should be professionally formatted, should include an appropriate salutation (e.g., "Dear Dr. Snyder"), an appropriate closing ("Sincerely, Steve E. Pointer"), and should be written in Standard English. Sending me e-mails is a good opportunity to develop or improve your professional communication skills. Please keep in mind that university emails are public records.

Lab Manual

Laboratory experiments will be available through the course D2L site. You will not need to purchase a lab manual for this course but will need to download and print each experiment before you attend lab.

Support and Help is Available!

Instructor and Tutoring Support

- **Instructor Office Hours**: During office hours, I am available to assist you in all aspects of this course. You do not need to make an appointment to stop by during "drop-in" office hours but should contact me in advance for appointments at other times. I expect that you will need help with this course and am always happy to work with you.

- **Individual Tutoring**: Drop-in tutoring is available through the UWSP Tutoring/Learning Center (TLC). Schedules and locations for tutoring can be found on the TLC website: http://www.uwsp.edu/tlc

- **Group Tutoring**: Group tutoring will be available this semester. Information about group tutoring will be communicated during the second or third week of class.

Disability Services

The University of Wisconsin Stevens Point is committed to providing students with disabilities the academic accommodations and auxiliary aids necessary to ensure access to all university services, programs and activities. In addition to the university's campus wide efforts to promote access and inclusion, students with disabilities are further accommodated based on specific individual needs. The Disability and Assistive Technology Center (DATC) is responsible for determining these accommodations. They provide services and assistance to enrolled students who are either permanently or temporarily disabled.

- The registration process can take up to 3 weeks to complete, so if you believe you will require accommodations, begin the process as soon as possible. To start the process, contact The Disability and Assistive Technology Center (DATC) at 715-346-3365 or emailing datctr@uwsp.edu
- UWSP has many services for students offered by various offices. Although decisions regarding disability specific accommodations are made on a case by case basis.
- Visit the Disability and Assistive Technology Center (DATC) website at: http://www.uwsp.edu/disability/Pages/default.aspx for information on services offered to students with specific disabilities

Course Policies

Participation and Attendance Policy

Attendance is critical to your success and that of your learning group. Your contributions during cooperative group learning sessions are important, and the other members of your group need to be able to rely on you. Make-up quizzes will only be available to students with excused absences (see late work/ missed quiz policy). In general, the following will be considered as excused absences. Note that this is not an exhaustive list, so if you are absent, please come and talk to me.

- Required military service (see information on the Office of the Registrar's website)
- Serious illness or injury (a physician's note may be required for protracted illnesses or reoccurring absences due to illness)
- Death in the family or other family emergency (documentation may be required)
- Religious observances (documentation may be required)
- University sanctioned events (advanced notice required. Note that student-athletes are responsible for communicating anticipated absences directly to the instructor at least a week in advance. Missing class to attend practice is not an excused absence under university and NCAA policy)

Lab Attendance

You will be allowed to miss one lab period without penalty (11 labs will be taught, only 10 will count towards your final grade). Make-up labs for excused absences will be given at the discretion of the

laboratory instructor(s). If a make-up lab is not possible, Dr. Snyder will provide you with a substitute assignment. To receive credit for CHEM 100, you must complete at least 8 of the 11 labs taught.

Academic Integrity Policy

The Board of Regents, administrators, faculty, academic staff and students of the University of Wisconsin system believe that academic honesty and integrity are fundamental to the mission of higher education and of the University of Wisconsin system. Students are responsible for the honest completion and representation of their work, for the appropriate citation of sources, and for respect of others' academic endeavors. Students who violate these standards will be confronted and must accept the consequences of their actions. **Please be aware that the penalties for academic misconduct can include suspension or expulsion from the university.** More information on UWSP academic standards and disciplinary procedures pertaining to academic misconduct can be found at: http://www.uwsp.edu/admin/stuaffairs/rights/rightsChap14.pdf

Late Work /Missed Quiz Policy

- Homework assignments must be turned in on the day that they are due. Late assignments will only be accepted when a student has missed a class period due to an excused absence (please see the attendance and participation policy in this syllabus). In such cases, the homework assignment is due at the start of the first lecture period in which the student returns from the absence.
- If you know that you will be unable to attend a period in which an exam is to be given, you must notify the instructor in writing (e-mail is fine) at least *one week* in advance in order to schedule a make-up exam. This includes students who must miss class due to university sanctioned events or scheduled military service.
- The instructor reserves the right to substitute a similar assignment, quiz, or exam in leu of the missed assignment, quiz, or exam
- The instructor reserves the right to change or amend these policies at his discretion on a case-by-case basis. He further reserves the right to require documentation of illness or extraordinary circumstances that might precludes students from successfully completing course requirements.

Electronics use Policy

An electronics usage policy is included along with this syllabus. Students must sign and return the policy before the end of the second week of class. The purpose of this policy is to help ensure a safe and distraction-free learning environment. If a student repeatedly violates this policy or if there are significant complaints from other students regarding electronics usage in the classroom or lab, the instructor will have no choice but to pursue disciplinary action. This may include referral of the matter to the Dean of Students.

Grading Information

The final course grade will be determined by an absolute point scale as shown below. Numbers in parentheses represent the approximate number of items in each category. If the number of items in a given category exceeds the number listed, low scores will be dropped until the number of items equals what is listed (i.e., if there are 13 lecture quizzes given, the lowest quiz score will be dropped, and only the top 12 will quiz scores will be counted towards your course grade).

Item	Point (Each)	Points (Total)
Homework (12)	10	120
Cooperative Learning Quizzes		
Individual Quiz (12)	8	96
Group Quiz (12)	2	24
Lecture Quizzes		
Individual Quiz (12)	8	96
Group Quiz (12)	2	24
Laboratory Reports (10)	20	200
Exams (3)	40	120
Self/Group Evaluations (3)	10	30
Total		**710**

The following scale will be used to assign letter grades. Note that at UWSP, a grade of "D-" is not given.

Grade	Points Range	Grade	Points Range
A	710 – 661	C+	567 – 540
A-	660 – 639	C	539 – 518
B+	638 – 610	C-	517 – 497
B	609 – 589	D+	596 – 469
B-	588 – 568	D	468 – 447
		F	446 – 0

A Note about Final Course Grades

I invite you to come and discuss your grade with me at any time during the semester. I welcome these conversations, and I am more than happy to help you to develop study strategies that can assist you in becoming a better thinker, learner and problem solver – skills that can help you to improve your grade. Additionally, if I have made a mistake in grading an assignment (it happens – I am not perfect!), I want to know right away so that I can correct the error. However, unless a mistake has been made in calculating your final grade, course grades posted after the final exam period are final and not subject to change. I always take a look at your grade and will round in your favor if you are in-between grades; however, I do not "bump" students up to a higher grade, provide extra credit or work opportunities, or change the grading scale after the final exam period.

Course Outline (Tentative)

Week	Dates	Chapter(s)	Events	Topics Covered
1	9/4 – 9/7	0		Course Introduction, Sustainability
2[†]	9/10 – 9/14	1, 2		Matter, Atmospheric Chemistry
3	9/17 – 9/21	2, 3		Air Pollution Chemistry, Solar Radiation
4	9/24 – 9/28	3, 4		Ozone Layer, Climate Chemistry
5	10/1 – 10/5	4	**Exam 1**	Climate Chemistry
6	10/8 – 10/12	5		Combustion Chemistry
7	10/15 – 10/19	6		Nuclear Chemistry and Alternative Fuels
8	10/22 – 10/26	1		Atomic Structure
9	10/29 – 11/2	7		Electrochemistry
10[‡]	11/5 – 11/9	8	**Exam 2**	Water Chemistry
11	11/12 – 11/16	8		Water Chemistry
12	11/19 – 11/23	8	**Thanksgiving**	Water Chemistry
13	11/26 – 11/30	9		Polymers and Plastics
14	12/3 – 12/7	10		Food Chemistry
15	12/10 – 12/14	11		Nutrition
16	12/18		**Exam 3**	(2:45 – 4:45, CBB 105)

Other Important Dates:

[†]Sept 13: Last day to add a course or drop a course without a grade (course will not appear on transcript)

[‡]Nov 9: Last day to drop a course (a grade of "W" will appear on transcript)

CHEM 100 Laboratory Schedule (Tentative)

Week 1	Dates	Experiment
1	September 4 - 7	No Lab
2	September 10 - 14	Safety and Check In
3	September 17 - 21	Experiment #1: Properties of Gases
4	September 24 - 28	Experiment #2: Spectroscopy
5	October 1 - 5	Experiment #3: Chromatography
6	October 8 - 12	Experiment #4: Molecular Shapes
7	October 15 - 19	Experiment #6: Energy of Fuels
8	October 22 - 26	Experiment #7: Energy in Selected Fuels
9	Oct. 29 – Nov. 2	Experiment #8: Radioactivity
10	November 5 - 9	Experiment #9: Electrochemistry
11	November 12 - 16	Experiment #10: Water Hardness
12	November 19 - 23	**No Lab – Thanksgiving Break**
13	November 26 - 30	Experiment #11: Acid/Base Reactions
14	December 3 - 7	Experiment #12: pH Measurements
15	December 10 - 14	Check-Out