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Chemistry 100  
Chemistry for the Citizen  
Spring 2017

	Monday	Tuesday	Wednesday	Thursday	Friday
08:00					
09:00					
10:00					
11:00		100 Lec 1 A121	100 Lab 1 C128	100 Lec 1 A121	
12:00		OFFICE HOUR	100 Lab 1 C128		
13:00	OFFICE HOUR		100 Lab 1 C128	OFFICE HOUR	
14:00	101 Lab 4 C128	100 Lab 2 C128	101 Lab 5 C128	100 Lab 3 C128	
15:00	101 Lab 4 C128	100 Lab 2 C128	101 Lab 5 C128	100 Lab 3 C128	
16:00	101 Lab 4 C128	100 Lab 2 C128	101 Lab 5 C128	100 Lab 3 C128	

Other Office Hours Are Available By Appointment

## I. Course Description

Selected principles of chemistry. Relationship between chemistry and modern society.  
2 hrs lec, 3 hrs lab per wk.

### General Education Designation(s):

GDR: NS; EL; GEP: ER, NSC

## II. Course Objectives (adapted from the GEP descriptions that can be found in the UWSP University Handbook)

### Natural Sciences (3-6 credits)

As the progress of our society becomes more dependent on science and technology, our future becomes increasingly dependent upon a scientifically literate population. Individuals today must be sufficiently knowledgeable about scientific facts, science applications, and the process of scientific inquiry in order to make reasoned decisions concerning their use in addressing society's problems. Courses in this area must contain a laboratory component to help you develop an understanding of scientific inquiry. Upon completing this requirement, you will be able to:

- Identify the basic taxonomy and principles of the scientific method as it pertains to the natural, physical world.
- Infer relationships, make predictions, and solve problems based on an analysis of evidence or scientific information.
- Apply scientific concepts, quantitative techniques, and methods to solving problems and making decisions.
- Describe the relevance of some aspect of the natural science to their lives and society.

### Environmental Responsibility (0-3 credits)

Maintaining a sustainable natural environment is necessary to the long-term survival of all organisms, including humans. An understanding of the individual, social, cultural, and natural factors that influence and contribute to environmental sustainability and ecosystem function is, therefore, essential to responsible global citizenship. Upon completing this requirement, you will be able to:

- Recognize areas of interaction between human society and the natural environment.
- Identify the individual, social, cultural, and ecological factors that influence environmental sustainability.
- Evaluate competing scientific claims that inform environmental debates.

### III. Lecture and Laboratory Schedule

Week	Date of Monday	Tuesday Topic/Chapter	Thursday Topic/Chapter	Laboratory
1	1/23	Intro./0	Atmosphere/1	Check-in
2	1/30	Atmosphere/1	Atmosphere/1	Exp 1 - Gases and Plotting
3	2/6	Ozone/2	Ozone/2	Exp 2 – Spectroscopy
4	2/13	Ozone/2	Climate Change/3	Exp 3 - Chromatography
5	2/20	Climate Change/3	Climate Change/3	Exp 4 - Molecular Models
6	2/27	Climate Change/3	<b>Exam 1 – Ch 1 to 3</b>	Exp 5 - Making Salt
7	3/6	Energy/4	Energy/4	Exp 6 - Energy of Fuels
8	3/13	Energy/4	Water/5	Exp 7 - Water Hardness
9	3/27	Water/5	Water/5	Exp 8 - Water Conductivity
10	4/3	Acidification/6	Acidification/6	Exp 9 - Acid/Base Rxns
11	4/10	Acidification/6	Nuclear/7	Exp 10 - pH Measurements
12	4/17	<b>Exam 2 – Ch 4 to 6</b>	Nuclear/7	Exp 11 -Solubilities
13	4/24	Nuclear/7	Electrochem/8	Exp 12 – Radioactivity
14	5/1	Electrochem/8	<b>Op. Exam – Ch 1 to 6</b>	Exp 13 – Electrochemical Cells
15	5/8	Electrochem/8	Course Wrap-Up	Check-out + Lab Final
16	5/15	<b>Final Exam: May 17 (Wed.) 8 – 10 AM</b>		

Two important dates (mm/dd/yy) - For the academic calendar see: <http://www.uwsp.edu/regrec/Pages/calendars.aspx>

2/1/2017	Last day to drop a course without a grade.
4/7/2017	Last day to drop a course. A grade of "W" will appear on your transcript.

### IV. Attendance Policy

Attendance and your department in class has an effect on the instructor and classmates, not to mention your performance. Research studies have repeatedly shown that the single best indicator for grades in a university class is regular attendance. In this class you may receive bonus points for attendance as determined by the following scale:

Near Perfect attendance (missing no more than one session): 20 points added to Final Exam score.

Missing two or three sessions: 10 points added to Final Exam score.

An absence may be excused at the instructor’s discretion if advance notification is provided. Attendance will be taken through “Clicker responses.” Only by responding to questions is your presence noted, therefore no clicker response equals an absence. Attendance during Laboratory sessions is included in this tally. Note: sleeping, paying unacceptable attention to an electronic device or other distracting behaviors may result in session being counted as an absence.

### IV. Class Work

To do well in this class (or any class) it is important to be engaged during the time you spend in lecture and laboratory. In order to accomplish this it is necessary to have some familiarity with the material. The following suggestions are from a meta analysis of student learning reported in the book *Make It Stick: The Science of Successful Learning* [Peter C. Brown, Henry L. Roediger III, Mark A. McDaniel].

- Always does reading prior to lecture
- Anticipates test questions and their answers as he reads
- Answers rhetorical questions in his head during lectures to test his retention of the reading
- Reviews study guides, finds terms he can’t recall or doesn’t know and relearns those terms
- Copies bolded terms and their definitions into a reading notebook, making sure he understands them
- Takes the practice test that is provided online by his professor, from this he discovers concepts he doesn’t know and makes it a point to learn them

The graded work for this class consist of D2L quizzes, Laboratory Reports, Hour Exams, and Final Exam. Information regarding these is listed the Evaluation Table below.

The “Your Turn” exercises in each chapter as well as the questions at the end of the chapter are strongly recommended to ensure you are comprehending the material. Particular attention should be placed on those questions that directly correlate to the chapter’s/concept’s objectives. Answers to most text questions are in the Appendix.

## V. Evaluation

ITEM	Percentage
Laboratory + Laboratory Final Quiz	25 %
Quizzes (1 of each 10 will be dropped)	15 %
Hour Exams (Chapters: 1 – 3 & 4 – 6)(2 @ 100 pts/Exam)	30 %
Optional Exam – can substitute for missing or lower exam 1 or 2	
Final Exam (200 pts) (50% Chapters 1 – 6 and 50% Chapters 7 – 9)	30 %
	100 %

### Notes:

- 1 All exams will be closed notes and closed book; information sheets will be provided when appropriate.
- 2 An inexpensive scientific calculator will be needed and it may be used on exams. It does not have to be a graphing calculator. There will be no sharing of calculators without the instructors permission. Cell phones may not be used as a calculator during exams.
- 3 Course grades will probably be assigned as follows: 100%-90.0%, A or A-; 89.9%-80.0%, B+, B or B-; 79.9%-70.0%, C+, C or C-; 69.9%-60.0%, D+ or D; Below 59.9%, F. I reserve the right to "curve" the final grades, but in no case will the curve result in requiring more than the above percentages for any grade. In other words, curving will never lower students' grades.
- 4 Missed or bombed midterm exam. **Make-up exams will not be given for any reason.** Instead, an optional exam, covering chapters 1 – 6, will be offered during week 14. The best two of these three exam scores are then counted as the two hour exam scores used to calculate your exam grade.
- 5 Missed experiment. **Make-up labs can only be scheduled during the week of the experiment.** Your lowest experiment grade will be dropped, so one missed experiment will be dropped. Other missed experiments count as zeros.
- 6 Please see the instructor if you think you need special consideration not covered by the policies listed above. However, absences due to documented health problems, approved university functions, family emergencies, and other similar events do not constitute a valid reason for a make-up exam. The policies outlined above were adopted specifically for these kinds of reasons.
- 7 Desire2Learn (**D2L**) Course Website: The D2L site for CHEM 100 will contain the grade book, copies of class handouts, laboratory experiment procedures and report forms, D2L Quizzes, and important announcements. Other items may be added throughout the semester as deemed useful.
8. The D2L Quizzes will cover material from the lecture, textbook, assigned readings, and assigned material from the internet. The window for each quiz is listed on D2L. You are required to complete these in the allotted time, independently, using only your resource material. Missing a D2L Quiz deadline will result in a 10% reduction in score.

Academic Responsibility: You are encouraged to study together, work problems and exercises with others in the class, and to seek help in understanding the material. However, unless specifically instructed otherwise, all work to be graded should be your own work and not copied from any other person. Any instances of plagiarism or cheating will be dealt with in accordance with the UWSP Chapter 14 rules on Academic Misconduct.

## VI. Bibliography – Required Resources

- 1) Text: *Chemistry in Context*, 8<sup>th</sup> ed. by the American Chemical Society.
- 2) Laboratory Experiments: The experiments are available on D2L for you to print. You are required to have a printed copy of the experiment procedure and report form for each laboratory session.
- 3) This class uses “Clickers” to do interactive polling. You are required to lease a clicker from the UWSP Help Desk in room 027 LRC, basement of the UWSP Library.

For Help Desk hours: <http://www.uwsp.edu/infotech/Pages/HelpDesk/default.aspx>

You will need your UWSP Student ID to get your clicker.

An \$8 semester lease fee will be automatically added to your UWSP student bill.

Note: Your clicker may be used in any class that requires clickers for the semester.

Returning clickers: Clickers must be returned to either the UWSP's IT Help Desk before the end of finals. Students with unreturned clickers will be billed a late fee and/or may be billed the replacement cost of the clicker.

## VII. Added Resources

### Tutoring Through the Tutoring and Learning Center

#### To Students:

Tutoring in Math and Science (TIMS) in the Tutoring-Learning Center (TLC) offers free Group and Drop-in sessions to support you in your chemistry classes. In addition, TIMS offers the option for individual chemistry tutoring sessions. The chemistry tutors are UWSP students who have done well in their classes and who are here to share their successful study habits and chemistry content knowledge to help others succeed. Talking about chemistry and working problem sets together helps to clarify and solidify knowledge, and the tutors are eager to help. If you have questions about the schedule or would like to make an appointment, please visit room LRC 018, email ([tlctutor@uwsp.edu](mailto:tlctutor@uwsp.edu)) or call (715) 346-3568 for information.

A Chem 100 Group Tutoring session will be scheduled within the first two weeks of the semester. Many students find these sessions to be very helpful and an important tool for their success in the class.