

**I. Instructor's Schedule**

	Monday		Tuesday		Wednesday		Thursday	Friday
<b>08:00</b>	<b>101 Lab 01L1</b>	<b>C128</b>	<b>PRAG</b>	01L2 GL	<b>101 Lab 01L3</b>	<b>C128</b>	<b>Prep</b>	<b>PRAG</b>
<b>09:00</b>	<b>101 Lab 01L1</b>	<b>C128</b>	<b>PRAG</b>	01L2 GL	<b>101 Lab 01L3</b>	<b>C128</b>	<b>101 Dis 01D1</b>	<b>PRAG</b>
<b>10:00</b>	<b>101 Lab 01L1</b>	<b>C128</b>	<b>PRAG</b>	01L2 GL	<b>101 Lab 01L3</b>	<b>C128</b>	<b>101 Dis 01D2</b>	<b>PRAG</b>
<b>11:00</b>	<b>Prep</b>		<b>PRAG</b>		<b>Prep</b>		<b>101 Dis 01D3</b>	<b>Prep</b>
<b>12:00</b>	<b>101 Lec 01</b>		<b>PRAG</b>		<b>101 Lec 01</b>		<b>Prep</b>	<b>101 Lec 01</b>
<b>13:00</b>	<b>PRAG</b>		<b>PRAG</b>		<b>PRAG</b>		<b>101 Dis 01D4</b>	<b>PRAG</b>
<b>14:00</b>	<b>PRAG</b>	01L4 AL	<b>PRAG</b>		<b>PRAG</b>	01L5 GS	<b>101 Dis 01D5</b>	<b>Meeting or Seminar</b>
<b>15:00</b>	<b>PRAG</b>	01L4 AL	<b>PRAG</b>		<b>PRAG</b>	01L5 GS	<b>PRAG</b>	<b>Meeting or Seminar</b>
<b>16:00</b>	<b>PRAG</b>	01L4 AL	<b>PRAG</b>		<b>PRAG</b>	01L5 GS	<b>PRAG</b>	<b>PRAG</b>

PRAG = Projects, Research, Appointments or Grading

PRAG times are also available as office hours for Chem 101 students

**II. Course Description and Learning Outcomes**

**Chem 101. Basic Chemistry. 5 cr.** (One semester survey). Introduction to atomic and molecular structure, bonding, stoichiometry, descriptive chemistry of both inorganic and organic compounds, selected topics in environmental and consumer chemistry. 3 hrs lec, 1 hr disc, 3 hrs lab per wk.

**Prerequisites:** Math 95 or QL completed or suitable math placement score

**General Education Designations:** GDR: NS; GEP: NSC

**Learning Outcomes for GEP: NSC**

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:

- 1) Interpret information, solve problems, and make decisions by applying natural science concepts, methods, and quantitative techniques.
- 2) Explain major concepts, methods, or theories used in the natural sciences to investigate the physical world.
- 3) Describe the relevance of some aspect of the natural science to their lives and society.

### Student Learning Outcomes (Chemistry Department)

Students completing Chem 101 will perform tasks, at an introductory level, representing the five learning outcomes shown below. These learning outcomes correspond to five of the eight learning outcomes that chemistry majors eventually perform at an advanced level. The letters correspond to the department's list of learning outcomes.

- apply the foundational principles of chemistry (conservation of matter, the laws of thermodynamics, the principles of phenomenological and mechanistic kinetics, and models for the electronic structure of atoms and molecules) to explain the chemical and physical properties of matter.
- work safely in a chemistry laboratory.
- use appropriate methods, techniques, and equipment and modern instruments for the synthesis, isolation, and characterization of matter and for the analysis of mixtures. Graduates will be able to explain the operating principles and interpret the output of instruments.
- analyze experimental results to draw justifiable conclusions.
- address chemical problems using their accumulated knowledge and skills in combination with scientific methodology to design and conduct experiments.

### III. Schedule (Lecture and Lab)

Wk	Text Chp			Lecture	Lab
	M	W	F		
1	Intro / M	M	M	M=Math= Sig Figs, Scientific Notation. & Algebra	Check-in
2	1	1	1 / 2		Exp 1 – Measurements
3	2	2	3		Exp 2 – Density
4	Exam 1	3	3 / 4	Exam 1: Math and Chps 1 & 2	Exp 3 – Separation of A Mix
5	4	4	4 / 5		Exp 4 – Unseen Things
6	5	5	6		Exp 5 – Hydrate
7	Exam 2	6	6 / 7	Exam 2: Chps 3 - 5	Exp 6 – Molecular Models
8	7	7	7/8		Exp 7 – Soap
9	8	8	8		Exp 8 – Alum
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10	8R	9	Exam 3	Exam 3: Chps 6 – 8 & Naming Atoms, Ions, and Ionic Compounds	Exp 9 – Reactivity
11	9	9 / 10	10		Exp 10 – Equilibrium
12	10	11	11		Exp 11 – Vinegar (titration)
13	11 / 12	12	Exam 4	Exam 4: Chps 9 – 11 & Naming Binary Molecular Compounds	Exp 12 – Aspirin / Wintergreen
14	12	13	13		Exp 13 – Calories
15	13 / 14	14	14		Check-out
16	-----	-----	-----	Final Exam M & Chps 1 - 14	----

Important Dates: Please see the Timetable

**Class Attendance:** Attendance for all lectures, discussions and laboratories is expected as outlined in the UWSP Undergraduate Catalog.

#### IV. Principle Assignments

Assignment	Graded (Y / N)	Notes
Concept Checks	N	learning aid located in most textbook sections
Calculation Corners	N	learning aid located in many textbook chapters
Chapter Reviews	N	located at the end of each chapter
Suggested Questions and Problems	N	learning aid located at the end of each chapter with solutions in appendix C
Supplemental Questions and Problems	N	learning aid distributed during lectures and discussions
Online Homework	Y	log in to Sapling website using directions and links supplied in an email.
Lecture Exams	Y	see schedule in syllabus for more information
Lab Reports	Y	Hand in report sheets for experiments 1-8 & 10-13 and the entire lab handout for experiment 9 (chemical reactivity)
Lecture Final	Y	comprehensive exam focusing on the main topics of the semester

#### V. Evaluation

ITEM	Total Points Possible	%
Laboratory (best 12 out of 13 @ 5 pts)	60	10.0
Online Homework	40	6.7
Exams (best 3 of 5 scores @ 100 pts / exam)	300	50.0
Final Exam (150 pts lecture and 50 pts laboratory)	200	33.3
	600	100

Notes:

- 1) All exams will be closed notes and closed book; information sheets will be provided when appropriate.
- 2) A calculator may be used on exams unless it isn't needed. There will be no sharing of calculators.
- 3) Each of the midterm exams will contain 5 extra credit points; the final exam will contain 10 extra credit points.
- 4) Missed or bombed midterm exams. **NO MAKEUP EXAMS WILL BE GIVEN.** Instead, the percentage of the final exam is treated as a fifth "exam" score. The best three of these five scores (Exams 1, 2, 3, 4, final %) are exam scores (see table above) used to calculate your final points. Note that the final exam score is a part of the final point total.
- 5) Missed experiment. **NO MAKEUP LABS WILL BE GIVEN.**
- 6) **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 point totals for any grade.
- 7) Please see the instructor if you think you need special consideration not covered by these notes.
- 8) UWSP is committed to providing reasonable and appropriate accommodations to students with disabilities and temporary impairments. If you have a disability or acquire a condition during the semester where you need assistance, please contact the Disability and Assistive Technology Center on the 6<sup>th</sup> floor of Albertson Hall (library) as soon as possible. DATC can be reached at 715-346-3365 or [DATC@uwsp.edu](mailto:DATC@uwsp.edu).

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. Suggestions for Studying / Learning / Preparing for Exams:

Three important points to remember are; (a) you should learn one or more new topics each week, (b) your understanding of chemistry will be measured using exams, and (c) you work alone on exams. In other words, you won't get any help from the instructor, a tutor, another student, or any of your friends during exams. You also will not be able to look at your notes, sample questions / problems in the textbook, or use Google during exams. To put this in a different light, your studying should involve a transition from using outside resources to help answering questions / problems to doing them completely by yourself. The following suggestions / hints may be helpful.

- 1) Skim each chapter before you start reading. The section headings and bold-type words should give you a sense of the chapter's material. I strongly recommend that you do this before I start the chapter in lecture.
- 2) Attend the lectures. I will follow the authors' order of topics closely, so my presentation of the material should complement the textbook. I will also relate the material that I am presenting to past and future topics. **I don't expect you to learn the material during lecture.** Instead, lectures are where you prepare to learn by hearing presentations about the course material and watching me answer questions and solve sample problems. Lectures also set the pace of the course. Note that many professors have the following general rule - students should spend two to four hours working outside of class for every hour spent in class. Translation - most of your learning occurs outside of the classroom.
- 3) Take notes during lecture but don't try to write down every word. I use the white board rather than PowerPoint Slides so that you can write down everything I put in the board. You may want to flesh out your lecture notes after lecture.
- 4) Read the textbook but don't try to read it all at once. The lectures set the pace and you should read the relevant sections before the next class period. Check your initial understanding of sections with their **Concept Checks**. Remember that part of your education is to become literate at the college/university level and that means you must be able to read college-level textbooks.
- 5) Take notes when you read but keep them to a minimum. Taking these notes is much more important than reading them. For example, write down, or sketch, as appropriate:
  - a) section and subsection headings and a brief description,
  - b) terms in bold, italicized or underlined type and along with brief definitions,
  - c) important figures, tables and diagrams,
  - d) important equations, the meaning of each term and the units that appear in it,
  - e) a functional summary of the sample problems in the **Calculation Corners**.
- 6) Answer questions / work problems, answer questions / work problems, answer questions / work problems, ... and then answer more questions / work more problems.
  - a) I will provide a set of suggested questions / problems that appear at the end of each chapter. For your convenience, answers to the **odd numbered** questions / problems are provided in appendix C. Try to **not peek** at your notes, textbook, or the authors' answers until you have an answer to check. Remember that you can't peek when you take exams.
  - b) Working a few problems every day or two is much more valuable than trying to do them all in one marathon session the day before an exam.
  - c) The hardest part is starting a problem.
  - d) If you spend 30 minutes on problems and you haven't worked any of them correctly, then you have wasted at least 20 minutes of your time. Wasted time does not count as study time.
  - e) It may be helpful to rework a selection of problems as you study for an exam but don't work the same problem over and over and over again.

- 7) Attend discussion sections. I will pose a variety of problems based on material from previous lectures, give you some time to work on them individually, and then provide the solutions. You can also ask questions about assigned problems.
- 8) Do the Sapling Learning online homework. The questions / problems provide real-time feedback. I have selected questions / problems that correspond to the topics covered in lecture.
- 9) If you are really stuck on a problem ask other students, talk to me after class, attend a tutoring session, or come and see me during an office hour (PRAG times on my schedule).

**The textbook author provides a review and at the end of each chapter which should be helpful when reviewing for exams. Remember that studying for an exam should be reviewing and an important part of reviewing is reworking previous questions / problems a second time.**

## **VII. Bibliography**

Text: Conceptual Chemistry 5<sup>th</sup> ed., John Suchocki, available through text rental.

Laboratory Experiments: A packet containing the experiments for the course must be purchased from the bookstore.

Name (please print): \_\_\_\_\_

Circle your Lab Section	M @ 8 AM 01 L1	T @ 8 AM 01 L2	W @ 8 AM 01 L3	M @ 2 PM 01 L4	W @ 2 PM 01 L5
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**I have received a copy of the course syllabus and the following items from it have been explained to me:**

- 1) the lecture schedule including the dates for exams;
- 2) the policy for missed\* or bombed hour exams (no makeups nor alternate times allowed except through the Disability and Assistive Technology Center);
- 3) the policy for missed\* experiments (no makeups nor alternate times allowed);
- 4) the attendance policies for lecture, discussion and lab;
- 5) the need for a scientific calculator;
- 6) the absence of individualized extra credit opportunities.
- 7) the grading policy for the course including the point totals for all the lecture and laboratory items and the grading scale;
- 8) extenuating circumstances (see me first and then the Dean of the College of Letters & Science).

\* **These policies cover all absences. Since I can't reliably judge students' absences to determine whether they are legitimate, these policies enable me to treat everyone equally and as fairly as possible. If you believe that you have extenuating circumstances that are not covered by these policies, then please see me as soon as possible. If you are not satisfied with my decision, you may take your case to the Dean of Students.**

**I understand the following policies and practices that will be in effect during examinations:**

- 1) All notes and books will be closed and put away 3 minutes before the start of the test period.
- 2) Exams will not be opened until the instructor announces that it can be started. You may fill in the information on the cover page.
- 3) Looking and even glancing at another exam is considered cheating and will not be tolerated. Similarly, allowing others to look at your exam is also considered cheating. The instructor will issue warnings and/or assign alternate seats for instances of possible cheating. Cases in which cheating is strongly suspected will be dealt with according to UWSP policies on Academic Misconduct.
- 4) All writing must stop at the end of the test period. The instructor may impose penalties for each person who fails to stop working on their exam when the test period is over.
- 5) Caps may be worn but the bill must face backwards during the exams.
- 6) No sharing of calculators during the exam.
- 7) No electronic devices other than a calculator may be present during the exam without instructor approval. **Cell phones are not considered calculators. Electronic translators are not allowed.**

**I agree to abide by all the policies described in the syllabus and listed on this page.**

**Date:** \_\_\_\_\_ **Signature:** \_\_\_\_\_