



# Survey of Chemistry

## Dr. Anna F. Oliveri

CH 104/104L/190  
Winter 2020

Lecture (CH 104):	CRN #####	Week Day	Time: XX:XX am – XX:XX pm	Room #
Lab (CH 104L):	CRN #####	Week Day	Time: XX:XX am – XX:XX pm	Room #
Problem Solving (CH 190):	CRN #####	Week Day	Time: XX:XX am – XX:XX pm	Room #

Office: Science 280

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Office Hours: MWF 9:30 am – 10:30 am  
MW 2:30 pm – 4:30 pm

- Required Materials:**
1. H. Stephen Stoker, General, Organic and Biological Chemistry, 7th ed., Cengage Learning, 2014
  2. Non-Programmable Scientific Calculator
  3. Appropriate Lab Coat and Goggles- available at the bookstore
  4. Lab notebook

**Description:** These courses explore the basic aspects of inorganic, organic, and biochemistry and are designed for students pursuing careers in nursing, allied health sciences, or majoring in non-science disciplines with lab for a general education graduation requirement to fulfill. Students interested in pursuing a degree in chemistry, medicine or engineering will be required to take a 200-level chemistry series. (HOPEFULLY) Approved for University Studies (Explorations Strand G - Sciences).

**Course Learning Outcomes:** After taking this course, you should:

- have a basic understanding of the relationship between *macroscopic properties* of matter and how they relate to the *structure of an atom, ion, or molecule*.
- be able to *apply mathematical* concepts, models, and arguments to construct models of *common chemical phenomena*, such as bonding between atoms, solution chemistry, gas behavior.

### Policies and Guidelines:

- Be prompt and regular in attendance. Excessive absences or tardiness will most likely result in a lower grade due to missed material.
- Read the chapter assignment *before or shortly after* class to enhance understanding and prepare for assessment.
- The course material will be available in the shared folder accessible on ownCLOUD (\*see further instructions)
- Cell phones must be silent during class. Please leave the classroom quietly if you must take a call.
- Quizzes will be given, on Wednesdays, throughout the term.
  - They will take approximately 10 minutes.
  - They will consist of multiple choice, matching, short answer questions, and problem solving.
  - There are **NO** make-up quizzes, unless it is a school related function (examples: conferences, sporting event, internship). If the quiz fits the exemption to the rule, then the professor must be notified before the event occurs and the quiz must be completed prior to the absence or within 2 days after.
  - Calculators are occasionally needed for the quizzes; no sharing allowed.
- A study group can be helpful to prepare for quizzes, but is most effective after studying alone and doing the reading.
- Chemistry is a cumulative subject; material from CH 104 will be used in CH 105 and CH 106. Keeping up with the course work is the key to success.
- Because originality of thought and integrity of scientific data are central to the scientific enterprise, the SOU Chemistry Department has a zero-tolerance policy towards academic dishonesty in any form. Acts of academic dishonesty include but are not limited to: plagiarism, deliberate falsification of scientific data, submitting or enabling the submission of identical lab reports or portions thereof, bringing unauthorized materials to examinations, looking at another student's work during an exam, or otherwise obtaining grades

under false pretenses. Academic dishonesty will be addressed by the Chemistry Department as described in the Academic Integrity Policy Statement.

**Schedule for Lectures:** The following textbook sections will be covered in lecture as indicated (potentially subject to change during term). Exams and quizzes are scheduled for Wednesdays.

Week	Lecture Topics	Book Sections	Experiment
1	Introduction to Matter and Physical Properties Elements, Compounds, and the Metric System Significant Figures, Scientific Notation, Conversion Factors	1.1-1.10 2.1-2.7	<i>Mass and Density Measurements</i>
2	Density, Heat, Structure of the Atom The Periodic Table, Electron Arrangements Electron Arrangements and Configurations	2.8-2.9 3.1-3.10	<i>Determination of Sugar in Common Beverages</i>
3	Bonding, Ionic Bonds Ionic Compounds, Polyatomic ions Lewis Structures, Covalent Bonds	4.1-4.11 5.1-5.5	<i>Periodic Properties</i>
4	Systematic Method for Drawing Lewis Structures; VSEPR <b>EXAM 1</b> Electronegativity, Polarity	5.6-5.12	<i>Molecular Models</i>
5	Moles and Chemical Calculations Balancing Chemical Equations Chemical Calculations using Chemical Equations	6.1-6.8	<i>The Fat Content of Potato Chips</i>
6	Kinetic Molecular Theory, Gas Laws The Ideal Gas Law, Changes of State Intermolecular Forces	7.1-7.13	<i>Empirical Formulas</i>
7	Solutions, Solubility, Solubility Rules <b>EXAM 2</b> Solution Concentration Units	8.1-8.5	<i>Gases</i>
8	Colligative Properties of Solutions Types of Chemical Reactions Redox Processes, Collision Theory, Reaction Rates	8.6-8.7 9.1-9.6	<i>Intermolecular Forces</i>
9	Chemical Equilibrium, LeChatelier's Principle The Nature of Radioactivity and Radioactive Decay	9.7-9.9 11.1-11.6	<i>Observing Chemical Reactions and Writing Word Equations</i>
10	Chemical Effects of Radiation Catch-up Review	11.7-11.13	<i>Application of LeChatelier's Principle</i>
<b>Final Exam: Date and Time</b>			

#### Grading Policies:

In **CH 104**, there are a total of 200 points available. There are seven quizzes, each worth 10 Points, with two dropped. There will be two tests and a final exam each worth 50 Points. The class average will then be curved to a 75% before letter grades are assigned. Knowing the **class average** and **standard deviation** will be important to track your letter grade.

Type of CH 104 Assessment	Total Points/Assignment	Total Points Available
Quizzes (7) – lowest 2 scores will be dropped	10	50
Exams (2)	50	100
Final Exam	50	50
Total Possible		200
Your Grade (%)		= (Your Total/200) x 100

Homework problems will be assigned, but not turned in for grading. The importance of doing the homework problems cannot be understated. You cannot expect to do well in this class if you don't do the homework. Much of what it takes to be successful in this course involves learning a way of thinking and problem solving that only can be gained from doing problems! If you want to get better at doing something, you practice--the same holds true for problem solving. So work lots of different problems and try not to use the study guide for answers until you have really made a significant effort toward solving the problem. Do not just look at problems and read the answers in the solutions manual and decide that you understand how to solve the problem. Reading the answer to a problem and saying that you understand it is not the same as working out the solution yourself! The process of solving problems must be learned... because there is no study guide in which to look for answers come test time!

**CH 190** is graded pass/no pass based on attendance. This weekly help session is designed to focus on the problem solving skills, referred to above, in a group based setting.

In **CH 104L**, there are a total of 250 points available. Each experiment will include a 25 point assignment consisting of a pre-lab, in lab, and post-lab work. The class average will then be curved to a 75% before letter grades are assigned. Knowing the **class average** and **standard deviation** will be important to track your letter grade.

#### Other Important Information:

1. **Course Folder:**

You will need to access either ownCloud on your desktop, the SOU Virtual Lab Manager, or the SOU ownCloud link on the SOU webpage. The Virtual Lab Manager is a virtual desktop that can be accessed by opening up the Windows **Start Menu**. Look under **All Programs** and find **Accessories**, and then under the Accessories tab, **Remote Desktop Connection**. Clicking on this tab will open up a window which asks for the name of the computer—enter **virtuallab.sou.edu** and then click on the **Connect** button. You will be asked for your user name and **SOU password** in the next window. Enter YOUR user name in this format: SOU\oliveria, then enter your SOU network password. The Virtual Lab Manager allows access to software as well as files, ownCloud only allows access to files.

2. **SOU Cares:**

SOU has a wide range of resources to help you succeed. Our faculty, staff, and administration are dedicated to providing you with the best possible support. The SOU Cares Report allows us to connect you with staff members who can assist with concerns, including financial, health, mental health, wellbeing, legal concerns, family concerns, harassment, assault, study skills, time management, etc. You are also welcome to use the SOU Cares Report to share concerns about yourself, a friend, or a classmate at <https://inside.sou.edu/ssi/index.html>. These concerns can include reports related to academic integrity, harassment, bias, or assault. Reports related to sexual misconduct or sexual assault can be made anonymously or confidentially. Student Support and Intervention provides recourse for students through the Student Code of Conduct, Title IX, Affirmative Action, and other applicable policies, regulations, and laws.

3. **Academic Honesty Statement and Code of Student Conduct:**

Students are expected to maintain academic integrity and honesty in completion of all work for this class. According to SOU's Student Code of Conduct: "Acts of academic misconduct involve the use or attempted use of any method that enables a student to misrepresent the quality or integrity of his or her academic work and are prohibited".

Such acts include, but are not limited to: copying from the work of another, and/or allowing another student to copy from one's own work; unauthorized use of materials during exams; intentional or unintentional failure to acknowledge the ideas or words of another that have been taken from any published or unpublished source; placing one's name on papers, reports, or other documents that are the work of another individual; submission of work resulting from inappropriate collaboration or assistance; submission of the same paper or project for separate courses without prior authorization by faculty members; and/or knowingly aiding in or inciting the academic dishonesty of another. Any incident of academic dishonesty will be subject to disciplinary action(s) as outlined in SOU's Code of Student Conduct: <https://inside.sou.edu/assets/policies/CodeofStudentConduct.pdf>. In case of loss, theft, destruction or dispute over authorship, always retain a copy of any work you produce and submit for grades. Retain all written work that has been graded and handed back to you.

4. **Emergency Notifications:**

SOU is committed to a safe community. Student, faculty and staff emails are automatically enrolled in SOU Alert, the campus emergency communication system. In the event of emergency, closure, or other significant disruption to campus operations, such as inclement weather, messages are delivered via SOU Alert. To ensure timely notification, students, faculty, staff are strongly encouraged to visit InsideSOU to register their cell phone numbers and/or add family members to the system. Campus Public Safety is available 24 hours/day by dialing 541-552-6911. CPS responds to safety concerns, incidents, and emergencies and can provide safety escorts to on-campus locations. CPS works in collaboration with Ashland Police and Fire.

#### Statement on Title IX and Mandatory Reporting

Federal law requires that employees of institutions of higher learning (faculty, staff and administrators) report to a Title IX officer any time they become aware that a student is a victim or perpetrator of gender-based bias, sexual harassment, sexual assault, domestic violence, or stalking. Further, Oregon law requires a mandatory report to law enforcement of any physical or emotional abuse of a child or other protected person, including elders and people with disabilities, or when a child or other protected person is perceived to be in danger of physical or emotional abuse. If you are the victim of sexual or physical abuse and wish to make a confidential disclosure please use the confidential advising available at <https://inside.sou.edu/ssi/confidential-advisors.html>, or use Southern Oregon University's Anonymous Harassment, Violence, and Interpersonal Misconduct Reporting Form: [https://jfe.qualtrics.com/form/SV\\_7R7CCBciGNL473L](https://jfe.qualtrics.com/form/SV_7R7CCBciGNL473L)

#### 5. **SOU Academic Support/Disability Resources:**

To support students with disabilities in acquiring accessible books and materials, and in planning their study and time management strategies, SOU requires all professors to include information regarding Academic Support and Disability Resources on course syllabi. It is the policy of Southern Oregon University that no otherwise qualified person shall, solely by reason of disability, be denied access to, participation in, or benefits of any service, program, or activity operated by the University. Qualified persons shall receive reasonable accommodation/modification needed to ensure equal access to employment, educational opportunities, programs, and activities in the most appropriate, integrated setting, except when such accommodation creates undue hardship on the part of the provider. These policies comply with Section 504 of the Rehabilitation Act of 1974, the Americans with Disabilities Act of 1990, and other applicable federal and state regulations that prohibit discrimination on the basis of disability.

If you are in need of support because of a documented disability (whether it be learning, mobility, psychiatric, health-related, or sensory) you may be eligible for academic or other accommodations through Disability Resources. See the Disability Resources webpage at <https://inside.sou.edu/dr/index.html> for more information or to schedule an appointment. If you are already working with Disability Resources, make sure to request your accommodations for this course as quickly as possible to ensure that you have the best possible access.