

ARIZONA WESTERN COLLEGE
SYLLABUS

CHM 151 GENERAL CHEMISTRY I

Credit Hours: 4 Lec 3 Lab 3

SUN # CHM 1151

PREREQUISITES: MAT 150 or MAT 151 or approved higher level math

NOTE: CHM 130 is highly recommended for students who have limited previous experience in chemistry. Certain Associate of Science (A.S.) degrees require CHM 151 and CHM 152.

COURSE DESCRIPTION

A detailed study of inorganic chemistry is presented with emphasis on atomic and molecular structure, chemical reactions and bonding, equilibrium, and the laws of chemistry in terms of modern theory.

1. COURSE GOALS

- 1.1 Sufficient knowledge and relevant applications of the basic laws of chemistry and principles of chemical reactions.
- 1.2 Awareness of the local and global relevancy of chemical principles and ideas in the environment and the marketplace.

2. OUTCOMES

Upon satisfactory completion of the course, students will be able to:

- 2.1 convert between SI (metric) units.
- 2.2 name a chemical compound when supplied with the formula and write the formula when supplied with its name.
- 2.3 identify trends in periodic properties of the elements on the periodic table.
- 2.4 write and balance molecular, ionic and net ionic chemical equations.
- 2.5 convert among atoms, moles, grams, and molarity / volume of one substance to atoms, moles, grams, and molarity / volume of the same or a different substance.
- 2.6 determine oxidizing agent, reducing agents, reduced species, oxidized species, and oxidation number of participating elements in reactions and compounds.
- 2.7 predict solubility and dissociation of substances in water and the effects that the solubility and dissociation has on the solution.
- 2.8 predict ideal gas behavior under differing conditions of pressure, temperature, volume, and quantity of gas.
- 2.9 calculate energy values from thermochemical data.
- 2.10 predict the behavior and properties of electrons and photons and their interactions.
- 2.11 predict the structure and electrical properties of molecular compounds.

3. AWC GENERAL EDUCATION (GE) CATEGORY &
CRITERIA NATURAL SCIENCES

- How to describe, explain, and predict natural phenomena using scientific, logical, and quantitative reasoning and empirical evidence from observation and experimentation
- The use of experimentation and/or observation to study natural phenomena, using the scientific method
- How to critically evaluate scientific information, including visual displays and quantitative data
- How the tools and techniques of the natural sciences are applied to global and local issues such as sustainability, climate change, etc.

4. METHODS OF INSTRUCTION

- 4.1 Lecture
- 4.2 Demonstrations
- 4.3 Appropriate audio-visual and multi-media aids
- 4.4 Student group activities when applicable
- 4.5 Laboratory exercises

5. LEARNING ACTIVITIES

- 5.1 Laboratory exercises
- 5.2 Group activities
- 5.3 Classroom demonstrations
- 5.4 Lectures
- 5.5 Writing Assignments

6. EVALUATION

- 6.1 In-class examinations
- 6.2 Final examination
- 6.3 Periodic quizzes
- 6.4 Laboratory exercises
- 6.5 Writing assignment

7. STUDENT RESPONSIBILITIES

- 7.1 Under AWC Policy, students are expected to attend every session of class in which they are enrolled.
- 7.2 If a student is unable to attend the course or must drop the course for any reason, it will be the responsibility of the student to withdraw from the course. Students who are not attending as of the 45th day of the course may be withdrawn by the instructor. If the student does not withdraw from the course and fails to complete the requirements of the course, the student will receive a failing grade.
- 7.3 Americans with Disabilities Act Accommodations: Arizona Western College provides academic accommodations to students with disabilities through Accessibility Resource Services (ARS). ARS provides reasonable and appropriate accommodations to students who have documented disabilities. It is the responsibility of the student to make the ARS Coordinator aware of the need for accommodations in the classroom prior to the beginning of the semester. Students should follow up with their instructors once the semester begins. To make an appointment call the ARS front desk at (928) 344-7674 or ARS Coordinator at (928) 344-7629, in the College Community Center (3C) building, next to Advising.
- 7.4 Academic Integrity: Any student participating in acts of academic dishonesty including, but not limited to, copying the work of other students, using unauthorized "crib notes", plagiarism, stealing tests, or forging an instructor's signature—will be subject to the procedures and consequences outlined in AWC's Student Code of Conduct.
- 7.5 Texts and Notebooks: Students are required to obtain the class materials for the course.
- 7.6 Arizona Western College students are expected to attend every class session in which they are enrolled. To comply with Federal Financial Aid regulations (34 CFR 668.21), Arizona Western College (AWC) has established an Attendance Verification process for "No Show" reporting during the first 10 days of each semester.
Students who have enrolled but have never attended class may be issued a "No Show" (NS) grade by the professor or instructor and receive a final grade of "NS" on their official academic record. An NS grade may result in a student losing their federal financial aid.
For online classes, *student attendance in an online class is defined as the following* (FSA Handbook, 2012, 5-90):
 - Submitting an academic assignment
 - Taking an exam, an interactive tutorial or computer-assisted instruction
 - Attending a study group that is assigned by the school
 - Participating in an online discussion about academic matters

- Initiating contact with a faculty member to ask a question about the academic subject studied in the course