

ARIZONA WESTERN COLLEGE
SYLLABUS

CHM 152 GENERAL CHEMISTRY II

Credit Hours: 4 Lec 3 Lab 3

SUM # CHM 1152

PREREQUISITES: CHM 151 and MAT 151 or 187

COURSE DESCRIPTION

Continuation of CHM 151. The descriptive and quantitative chemistry of the elements and compounds with regards to kinetics, atomic and molecular structure and bonding, trends of the periodic table, thermochemistry, thermodynamics, and electrochemistry.

1. COURSE GOALS

- 1.1 Sufficient knowledge and relevant applications of the basic ideas involved with atomic and molecular structure, chemical kinetics, electrochemistry, and thermodynamics.
- 1.2 Awareness of the local and global relevancy of chemistry in the environment and in the marketplace.

2. OUTCOMES

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

- 2.1 calculate pH, pOH, and concentration of species in solutions from K_a , K_b , and concentration data.
- 2.2 identify, buffers, strong and weak acids and bases and the properties thereof.
- 2.3 determine moles, current, voltage and ion flow of redox reactions.
- 2.4 calculate the concentration of reactants and equilibrium constant from appropriate data.
- 2.5 use Le Chatelier's principle to predict the effects of changing reaction conditions on reaction equilibrium.
- 2.6 determine reaction rates and factors affecting reaction rate.
- 2.7 distinguish among properties of solids, liquids and gasses, phase changes and the factors affecting phase.
- 2.8 relate between energy and chemical systems.
- 2.9 characterize various types of radiation.

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 communicate information about the natural world using written, numeric, and/or visual formats; and when possible, how to use computational/simulation programming environments as a method for solving systems and simulating theoretical or experimental data
- How to critically evaluate scientific information, including visual displays and quantitative data

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 demonstration
- 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