


COCONINO COMMUNITY COLLEGE
COURSE OUTLINE

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Status: Permanent

December 4, 1991
October 25, 2011
March 23, 2001
November 17, 2006

A. Identification:

1. Subject Area: Chemistry (CHM)
2. Course Number: 151  CHM 1151
3. Course Title: General Chemistry I
4. Credit Hours: 5
5. Catalog Description: Fundamental concepts in chemistry presented at a level appropriate for science majors. An exploration of matter and the changes it undergoes using both qualitative and quantitative methods. Prerequisites: MAT 121 or MAT 122 or placement beyond prerequisite courses. Recommended: CHM 130. General Education: Physical and Biological Sciences. Four lecture. Three lab.

B. Course Goals:

Students will earn a greater understanding of chemical principles and concepts, become familiar with scientific methods and general laboratory principles, and apply basic principles of chemistry.

C. Course Outcomes:

Students will:

1. Develop a working knowledge of Scientific Methods
2. Interpret the numerical and graphical presentation of scientific data
2. Communicate laboratory results in written and oral form
3. Manipulate and use the metric system for measurements and analysis.
4. Perform quantitative calculations including:
 - a. Reaction stoichiometry
 - b. Solution preparation
 - c. Chemical thermodynamics
 - d. Dimensional analysis
5. Demonstrate an understanding of atomic and molecular structures, chemical bonding and the relationship to physical and chemical properties.
6. Solve problems requiring applications of abstract concepts and algebraic manipulation
7. Use the tools and equipment necessary for basic scientific analysis and research with the appropriate safety precautions in an OSHA approved laboratory environment.

D. Course Outcomes Assessment:

Will include:

1. Comprehensive final exam
2. Instructor evaluated lab report.

E. Course Content:

Will include:

1. Scientific Methods and Measurement.
2. Matter and Physical/Chemical Properties.
3. States of Matter
4. Atomic Structure
5. Chemical Formulas, Nomenclature and Composition.
6. The Mole Concept
7. Chemical Equations and Reaction Stoichiometry
8. Solution Chemistry.
9. Periodic Properties.
10. Bonding & Molecular Structure
11. Introductory Topics of Organic and Biological Chemistry.
12. Safe and Supervised Laboratory Practice including Experimental Design and Data Analysis.