

CATALOG INFORMATION

Dept & Nbr: CHM 250 Title: GENERAL CHEMISTRY I
Full Title: General Chemistry I

Units	Course Hours	Per Week	Nbr of Weeks	Course Hours	Total
Max: 5.0	Lecture	4.0	17	Lecture	68.0
Min: 5.0	Lab	4.0		Lab	68.0
	Contact DHR	0.0		Contact DHR	0.0
	Contact Total	8.0		Contact Total	136.0
	Non-contact DHR	0.0		Non-contact DHR	0.0

Title 5 Category: 01 AA Degree Applic
Grading: GC Credit course for grade or CR/NC
Repeatability: 00 No repeatability allowed or defined
Also listed as:

CATALOG DESCRIPTION:

This course will study general chemical principles including: measurements, matter, atomic structure, the periodic table, chemical bonding, energy, nomenclature, reactions, mass relationships, gases, and solutions. This course is often for science, engineering, and pre-professional majors.

PREREQUISITES:

CHM 200 or high school chemistry and MTH 56 or one year of high school Algebra II.

COREQUISITES:

RECOMMENDED PREPARATION:

No advisories.

LIMITS ON ENROLLMENT:

SCHEDULE OF CLASSES INFORMATION:

Prerequisites: CHM 200 or high school chemistry and MTH 56 or one year of high school Algebra II.
This course will study general chemical principles including: measurements, matter, atomic structure, the periodic table, chemical bonding, energy, nomenclature, reactions, mass relationships, gases, and solutions. This course is often for science, engineering, and pre-professional majors.
(Grade or CR/NC)
Transfer Credit: CSU; UC.

ARTICULATION and CERTIFICATE INFORMATION

ASSOCIATE DEGREE: Effective: FALL 1981 Inactive:
Area: A NATURAL SCIENCES
CSU GE: Effective: FALL 1981 Inactive:
Transfer area: B1 PHYSICAL UNIVERSE
B3 LAB ACTIVITY

IGETC: Effective: FALL 1981 Inactive:
Transfer area: 5A PHYSICAL SCIENCES

CSU TRANSFER: TRANSFERABLE Effective: FALL 1981 Inactive:

UC TRANSFER: TRANSFERABLE Effective: FALL 1981 Inactive:

CAN:

CERTIFICATE APPLICABLE: N NOT CERTIFICATE/MAJOR APPLICABLE

APPROVAL AND DATES

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Version 02 Submitted by: JOSHUA JUNKER Date: 02/25/2009
Department approved: Debra Polak Date: 03/11/2009
Curriculum approved: 06/01/1981 Version approved: 02/27/2009
Prerequisites approved: 04/11/2000 Last reviewed: 02/27/2009
Term effective: FALL 2009 Last taught: Inactive:

COURSE CONTENT

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OUTCOME AND OBJECTIVES:

1. Relate chemical concepts to the areas of science, engineering, and their everyday lives
2. Interpret chemical concepts including: measurements, states of matter, atomic structure, electronic structure, bonding, molecular shape and properties, gases, intermolecular forces, reactions, solutions, and stoichiometry.
3. Solve basic level problems (using formulae and measurements) related to chemical concepts including: measurements, states of matter, atomic structure, electronic structure, bonding, molecular shape and properties, gases, intermolecular forces, reactions, solutions, and stoichiometry.

TOPICS AND SCOPE:

Lecture:

The Scientific Method

Measurements

Matter

Unit Conversion

Atomic Structure

The Periodic Table

Chemical Formulas and Nomenclature

Covalent and Ionic Bonding

Molecular Shape and Architecture

Mass Relationships in Chemical Reactions

Acid-Base, Reduction-Oxidation, and Precipitation Reactions

The Kinetic Molecular Theory of Gases

Energy and Thermodynamics

Electronic Structure of Atoms and Ions

Periodic Relationships

Intermolecular Forces

Properties of Solutions

Laboratory:

Safety

The Scientific Method

Careful Observation and Data Collection

Measurement and Calculations Derived from Measurement

Utilization of Basic Laboratory Equipment, Tools, and Instrumentation

Experiments that reinforce concepts covered in lecture including:

Chemical Identification
Separation of Mixtures
Chemical Synthesis
Calorimetry
Acid-Base Titration
Instrumental Analysis
Quantitative Analysis

ASSIGNMENTS:

READING ASSIGNMENTS:

The student will be responsible for all reading assignments from the textbook and laboratory manual relating to the topics of the course.

WRITING ASSIGNMENTS:

The student will submit lab reports of all laboratory experiments.

OUTSIDE ASSIGNMENTS:

The student is responsible for pre-lab preparation and recommended problem assignments.

METHOD OF INSTRUCTION:

The lecture will utilize a number of presentation techniques including: boardwork, computer presentations, molecular models, demonstration, and in-class problems. Laboratory experiments will follow a presentation on concepts, experimental and instrumental techniques, safety, and waste disposal. The student will make observations of measurements, record and analyze data, and answer questions based on the experiment.

METHODS OF EVALUATION:

The course grade is based on the following metrics: Tests: 30-40%, Final Exam: 10-20%, Laboratory: 25-33%, and Classwork (In-class assignments, homework, quizzes, participation presentations and special assignments) 10-20%. The proposed percentages are only suggestions and should be established by the lecture instructor. However, the student must pass the final exam and laboratory to receive a passing grade for the course.

BASIS FOR GRADING:

The assignment of a grade is based on the level of achievement of the outcomes and objectives of the course outline and is reflected in quantifiable terms in the course syllabus.

REPRESENTATIVE TEXTBOOKS:

Lecture: General Chemistry - 8th Edition; Raymond Chang, 2009.
Laboratory: Laboratory Manual for Principles of General Chemistry Eighth Edition; J.A. Beran, 2009.