

CATALOG INFORMATION

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Dept & Nbr: CHM 251 Title: GENERAL CHEMISTRY II
Full Title: General Chemistry II

Units	Course Hours	Per Week	Nbr of Weeks	Course Hours	Total
Max: 5.0	Lecture	3.0	17	Lecture	51.0
Min: 5.0	Lab	6.0		Lab	102.0
	Contact DHR	0.0		Contact DHR	0.0
	Contact Total	9.0		Contact Total	153.0
	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: Solutions, Chemical Kinetics, Chemical Equilibrium, Acids and Bases, Thermodynamics, and Electrochemistry. This course is often a requirement for science, engineering, and pre-professional majors.

PREREQUISITES:
CHM 250.

COREQUISITES:

RECOMMENDED PREPARATION:
No advisories.

LIMITS ON ENROLLMENT:

SCHEDULE OF CLASSES INFORMATION:

Prerequisites: CHM 250.
This course will study general chemical principles including: Solutions, Chemical Kinetics, Chemical Equilibrium, Acids and Bases, Thermodynamics, and Electrochemistry. This course is often a requirement for science, engineering, and pre-professional majors. (Grade or CR/NC)
Transfer Credit: CSU; UC.

ARTICULATION and CERTIFICATE INFORMATION

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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: 04/22/2005 Last reviewed: 02/27/2009
Term effective: FALL 2009 Last taught: Inactive:

COURSE CONTENT

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OUTCOME AND OBJECTIVES:

1. Interpret chemical concepts including: kinetics, electrochemistry, thermochemistry, nuclear, organic, equilibrium
2. Apply chemical concepts in laboratory chemistry environment
3. Relate chemical concepts to the areas of science, engineering, and their everyday lives
4. Solve basic level problems (using formulae and measurements) related to chemical concepts

TOPICS AND SCOPE:

Lecture:

The Effect of Temperature and Pressure on Solubility

Colligative Properties of Solutions

Chemical Kinetics and Catalysis

Acids and Bases

Reaction and Solubility Equilibria

Thermochemistry, Entropy, and Free Energy

Electrochemistry

Nuclear Chemistry (optional)

Introduction to Organic Chemistry (optional)

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 Kinetics

Chemical Equilibrium

Acids and Bases

Thermodynamics

Electrochemistry

Quantitative Analysis

ASSIGNMENTS:

READING ASSIGNMENTS:

The student will be responsible for all reading assignments from the textbook and laboratory manual related 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, demonstrations 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 or 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.