UNIVERSITY OF GUAM

COLLEGE OF NATURAL AND APPLIED SCIENCES

DIVISION OF NATURAL SCIENCES

Fall 2017

CH 100 Inorganic Chemistry - 3 Credit Hour, MW 8am-9:20am

Instructor: Wai-Chi Lau

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Office Hours: To be announced

COURSE OBJECTIVES:

This is an introductory chemistry course designed for beginning students who have not studied chemistry at the college level and who do not expect to pursue an academic major in a core natural science field. In other words, this course is basically chemistry for non-scientists. Topics to be covered include modern chemical principle, theories, and laws pertaining to atomic structure, nature of chemical bond, stoichiometric calculations, and acid-base reactions. CH-100 meets for three hours of lecture per week. The concurrent lab course, CH 100L, also meets for three hours of laboratory per week.

The goals of the introductory chemistry course are:

* to provide an overview of chemistry for non-specialists;

* to provide a sound foundation in chemical concepts;

* to develop skills in the fundamental of stoichiometry and molarity calculations;

* to study what modern chemistry is and how it applies to a broad range of disciplines

* to develop a broad understanding of chemistry and chemical reactions

* to stimulate future interest in chemistry and provide a basis for open-ended injury

* to gain an appreciation of the many ways that chemistry affects the daily lives of everyone

Course Student Learning Outcomes (SLO): Upon completion of the course, students will:	**Matching Program Learning Outcome (PLO)**	**Matching Institutionl Learning Outcomes (ILO)**	**Method of Assessment**
Perform measurement calculations involving units conversion, density, and temperature scales with correct significant figures	PLO1 PLO4	ILO1 ILO2	-Assignments - Exams
Understand states of matter, elements, atoms, ions, molecules, compounds	PLO1 PLO4	ILO1 ILO2	-Assignments - Exams
Write names and formulas of elements and compounds, know the rules of nomenclature	PLO1 PLO3	ILO1 ILO3	-Assignments - Exams
Understand types of chemical reactions, including reactions in aqueous solutions	PLO1 PLO4	ILO1	-Assignments - Exams
Calculate chemical quantities and stoichiometric relations	PLO1 PLO4	ILO1 ILO2	-Assignments - Exams
Understand the role of energy in chemistry, including expressions involving specific heat and enthalpy	PLO4	ILO1 ILO2	-Assignments - Exams
Describe atomic structure and electron configuration. Be introduced to selected topics such as chemical bonding, gases, solutions, acids and bases, and equilibrium	PLO4	ILO1 ILO2	- Assignments - Final and Topic exams

Chemistry Program Learning Outcomes

PLO 1: Demonstrate the knowledge of fundamental concepts of chemistry and its relevance to the scientific method and other fields in science

PLO 2: Demonstrate the skills to make observations, experimentation, collect and collate data, analyze and interpret data in a safe chemical environment

PLO 3: Demonstrate the ability to clearly articulate, formulate, and communicate scientific information using computer, written and oral communication skills

PLO 4: Demonstrate critical thinking, problem solving skills and the ability to use chemical knowledge and mathematical skills to identify, evaluate, analyze, synthesize, and integrate data and abstract ideas in solving problems

PLO 5: Demonstrate the knowledge and skills in advanced instrumentation, applications, interpretation, and experimental design to address scientific queries in chemistry, industry, the environment, health, and related fields

PLO 6: Demonstrate a sense of exploration and research approach that enables students to pursue lifelong learning in chemistry

PLO 7: Demonstrate interaction skills and teamwork

Institutional Expected Student Learning Outcomes

Some of the expected fundamental knowledge, skills, and values that the University of Guam student will have demonstrated upon completion of any degree are:

ILO1: Mastery of critical thinking and problem solving

ILO2: Mastery of quantitative analysis

ILO3: Effective oral and written communication

ILO4: Understanding and appreciation of culturally diverse people, ideas and values in a democratic context

ILO5: Responsible use of knowledge, natural resources, and technology

ILO6: An appreciation of the arts and sciences

ILO7: An interest in personal development and lifelong learning

Textbook: Introductory Chemistry: A Foundation 8th Edition by Steven S. Zumdahl (Author), Donald J. DeCoste (Author)

Topics will include:
Chemistry: An Introduction
Measurements and Calculations
Matter
Chemical Foundations: Elements, Atoms, and Ions
Nomenclature
Chemical Reactions: An Introduction
Reactions in Aqueous Solutions
Chemical Composition
Chemical Quantities
Energy
Modern Atomic Theory
Chemical Bonding
Gases
Liquids and Solids
Solutions
Acids and Bases
Colligative properties
Colloids

METHODS OF EVALUATION:
Three monthly exams and a final exam will be given. Homework and presentations will be assigned, along with occasional quizzes. Grades will be based on:

A = 90% and above

B = 80% to 89%

C = 70% to 79%

D = 60% to 69%

F = below 60%

Special Needs: UOG Disability Policy

The University of Guam complies with the Americans with disabilities Act of 1990 and the rehabilitation Act of 1993. Any student who may require an accommodation under such provisions should contact the ADA office prior to the commencement of the semester. The instructor should be presented with appropriate documentation and contacted in his office for discussing the details of accommodations as soon as possible and no later than the end of the first week of classes. No retroactive accommodations will be provided in this class.