Introduction to Chemistry | Lecture

Academic Year 2020-2021

Course Information

Course Numbers	Total Credits	Time Requirement
CHEM110	**1 (Lecture Only)**	**15 hrs**

Course Details

High School Diploma or equivalent.

Course Description

Introduction to Chemistry is intended for students with little to no prior knowledge of chemistry. It provides students with foundational knowledge for additional chemistry classes required in health sciences education. This course covers fundamental chemistry concepts such as basic atomic theory, classification of matter, chemical equations, chemical reactions, nomenclature, the behavior of electrons, stoichiometry and molecular bonds. Introduction to Chemistry provides students with problem-solving skills necessary for success in general chemistry classes.

Lecture and Laboratory Communication

A website will be set up on Canvas by your instructor.
Log in with your Username and password: **https://scuhs.instructure.com**

Faculty Information

Refer to the Canvas course webpage for this information.

Class Meeting Times

Refer to Canvas course webpage for this information.

Instructional Materials

Required Text(s)

Introduction to Chemistry by Richard Bauer, 5e (Connect©) (ISBN: 9781259911149. An electronic textbook is provided to students through Canvas.

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Course Purpose

Course Learning Outcomes

Students will learn to:

1. Classify matter according to element or compound, atom or ion, pure or mixture, heterogeneous or homogeneous mixture
2. Correctly name compounds to write balanced chemical reactions.
3. Use the periodic table to predict size, states of matter, metallic characteristics, subatomic structure, electronegativity, electron configurations and ionic charges.
4. Calculate molar mass, density, solution concentration, and energy changes using correct measurements, dimensional analysis, stoichiometry, and gas laws.
5. Describe bonding as ionic or covalent, draw Lewis structures, and use VSEPR to predict simple geometric shapes.

Course Learning Objectives: Please refer to the appendix for a full list of course objectives.

Course Schedule (subject to slight modifications by the instructor)

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Lecture	Assessment
Chapter 1: Matter and Energy	Reading Assignment Homework Quiz
Chapter 2: Atoms, Ions and the Periodic Table	Reading Assignment Homework Quiz
Chapter 3: Chemical Compounds	Reading Assignment Homework Quiz
Chapter 4: Chemical Composition	Reading Assignment Homework Quiz
Chapter 5: Chemical Reactions and Equations	Reading Assignment Homework Quiz
Chapter 6: Quantities in Chemical Reactions	Reading Assignment Homework Quiz

Lecture	Assessment
Chapter 7: Electron Structure of the Atom	Reading Assignment Homework Quiz
Chapter 8: Chemical Bonding	Reading Assignment Homework Quiz

Tentative Grading Procedures

Assessment	Points per assignment	Total number of assignments	Total points	Percentage
Reading Assignment	8	10	80	11%
Homework	8	25	200	26%
Quiz	8	60	480	63%
Total			**760**	**100%**

Grading scale:

Please note letter grades will be assigned only at the end of the trimester.

A = 90% to 100%

B = 80% - less than 90%

C = 70% - less than 80%

D = 60% - less than 70%

F = less than 60%

W = Withdrawal

Grading procedures:

The format of assessments may include multiple choice, short answer, labelling, fill-in-the-blank, or matching examinations. Participation points are required and will be assigned by the instructor as the course progresses through the use of any of the following: in class mini quizzes, activities, kahoot online quizzes (www.kahoot.it). For online quizzes students must have a phone, tablet, laptop or other internet connected device to participate. Students must be in class during the participation activities to receive participation marks.

Academic Integrity

Visit SCU's **Academic Integrity** page to review policies for professionalism and academic integrity.

Teaching Methods and Activities

The course will follow a linear format, meaning you will complete all of the modules in sequence. The material in each module will include a combination of readings, videos, homework, and other exercises. You'll also complete a quiz at the end of each module. You can read about each of the course components below.

Reading Assignment: These sections are created on "Connect" through SmartBook. They improve reading productivity and provide students with better knowledge of retention. SmartBook is an eBook that applies the adaptive technology of LearnSmart to ensure a focus on content the student hasn't learned while also promoting long-term retention of learned material.

Homework: Homework problems are reflective of the type of questions that will be on the quizzes. Remember, there is a difference between completing chemistry-related word problems with access to help (book, instructor office hours, tutor, Google, etc.) vs. completing problems on your own. It is okay and encouraged to use all available resources to learn how to complete a certain type of chemistry problem. However, the long-term goal should be obtaining the ability to complete quiz problems without any aid, so attempt to complete homework on your own to practice.

Quizzes: There will be a quiz at the end of each module. There will be questions that come directly from the textbook chapters, activities, and videos. Questions may come in the form of multiple choice, free response, or fill in the blank.

University Policies

Accommodations

As a learning-centered community, Southern California University of Health Sciences recognizes that all students should be afforded the opportunity to achieve their academic and individual potential. The University recognizes and supports the standards set forth in Section 504 of the Rehabilitation Act and

the American with Disabilities Act (ADA). In accordance with its mission and federal and applicable state laws, the University is committed to making reasonable accommodations for qualified applicants for admission and enrolled students with disabilities. A student who needs accommodation(s) due to a disability should contact the Academic Support Office located in the Learning Resource Center.

Faculty and Dr./Patient Relationships

SCU faculty are highly skilled. However, per University Policy, health care is offered to students through the University Health System only. Neither preclinical nor clinical faculty can provide advice, assessment, treatment, or other elements that would be considered part of a Doctor-Patient relationship outside of a clinical setting established for that purpose.

Learning Activities

Students are expected to spend at least two hours for each lecture hour of course time per week in activities and assessments outside the classroom. Examples of activities include, but are not limited to: writing papers; reading articles or text; small group work; presentations; completing assignments; preparation for assessments; online activities and other activities that do not include direct instructor interaction and involvement.

All university policies apply to this course and all others. For full policy information please consult the university SCU Policy Manual. For a quick reference guide to the following policies: make-up examination, F-challenge examination, grade posting, results of failing grades, student support information, syllabus amendments, special needs, student conduct, and attendance, please consult the academic policies document housed on the **Online Student Services .**

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Appendix: Course Learning Objectives

At the conclusion of this course, a successful student should be able to:

1. Understand and apply the scientific method (basic to all experimental sciences) to solve problems in chemistry.
2. Understand and apply systems of measurements, determination of density, and word problems using correct significant figures, rounding rules and scientific notation.
3. Classify matter by distinguishing between states and composition.
4. Demonstrate an elementary knowledge of the periodic table by drawing conceptual atomic structures, diagraming electron configuration, memorizing names and symbols of select elements, and predicting periodic trends.
5. Compare and contrast compounds to determine if the compound is ionic or covalent; convert between compound names and formulas by using names and symbols of elements, polyatomic ions, and knowledge of charges on common ions.
6. Classify the types of chemical reactions, apply solubility rules, balance chemical equations by inspection, and demonstrate knowledge of molecular, total ionic and net ionic equations.
7. Compare and contrast properties of gases, liquids, and solids in terms of energy.
8. Use the mole concept in calculating mass, moles, molar mass as either molecular or formula mass, empirical and molecular formulas, percent composition, and determining limiting reagents in stoichiometry problems.