



INORGANIC CHEMISTRY I

CHEM 201

Course Description

This course provides students with the fundamental concepts of the chemical processes, enabling students to use chemical concepts in daily living and in the understanding of biochemistry. It covers matter, periodic table, writing and balancing chemical reactions, chemical composition and properties of compounds and modern atomic theory. It includes atomic structure, stoichiometry, understanding the symbols of elements. Topics are developed by thoughtful integration of the materials during class discussion and problem based instruction.

Credit: 3 credits

Repeatable: No

Course Structure

The course will be presented in different formats: Lectures with PowerPoint, self-directed learning, discussions and student assignments etc.

Competencies

This course emphasizes competencies to enhance skills essential for a future health care professional.

- Knowledge
 - **Demonstrate content knowledge and skills in foundational courses required by biomedical professionals**
 - **Demonstrate information literacy**
 - Demonstrate quantitative reasoning
 - **Demonstrate longitudinal learning through coursework**
- Critical Thinking
 - Develop the skills of self-reflection and peer assessment to improve personal performance.
 - **Demonstrate the ability to analyze literature and written material**
 - **Demonstrate the ability to distinguish between well-reasoned and poorly reasoned arguments**
- Communication Skills
 - **Demonstrate effective presentation skills to faculty and peers.**
 - **Demonstrate effective listening skills**
 - **Demonstrate effective written communication**

Objectives:

Upon completion of CHEM 201 course, the student should be able to describe:

- Basic concepts of inorganic chemistry, divisions and their application to medicine.
- Basic concept of Matter, classification and practical identification.
- Basic concept atoms, molecules, elements, compound and ions.
- Basic concept of chemical equations, writing and balancing of simple and complex chemical equations.
- General concept of aqueous solutions, solvent and solute.
- Concept of stoichiometry, mole calculation, determination of percentage composition of compounds, determination of empirical and molecular formula, determination of limiting and excessive reagents.
- Generalize concept and brief description of the periodic table.
- Basic concept of gas, air composition and their impacts on human health.
- Basic concept of energy. Classification with practical examples.
- Brief introduction to Bonding.

Schedule: Dates and times to be posted at the beginning of the term on the online calendar.

Course Topics/Outline

Activity #	Lecture Topics
Week1	Introduction to Inorganic chemistry and State of matter
Week 2	Introduction to the periodic table and brief analysis
Week 3	Atoms, molecules and ions, Quiz 1
Week 4	Writing and balancing chemical reactions
Week 5	Stoichiometry, Quiz 2
Week 6	Review of Materials from Week 1 to 5
Week 7	Mid-Term Examination
Week 8	Introduction to aqueous solutions
Week 9	Gases
Week 10	Introduction to acids and bases, Quiz 3
Week 11	Energy relations in chemical reactions
Week 12	Introduction to bonding
Week 13	Pre Examination Review
Week 14	Final Examination

Assignments:

Students are required to submit research work based on topics described in the course outline.

Text books and Reference Materials:

Frederick A. Bettelheim, William H. Brown, Mary K. Campbell, Shawn O. Farrell, Omar J. Torres. Introduction to General, Organic and Biochemistry. 11th edition. Publisher: Cengage Learning.

Evaluation: Students are evaluated by three quizzes, a midterm exam, a final exam, assignments and their attendance.

Points:

	Points*
Assignments	10%
Quizzes	10%
Mid Term	30%
Final exam	40%
Attendance	10%
Total points	100%

*Points are approximate and may be adjusted during the term. Students will be notified of changes.

Grade:

Percent of Points	Letter Grade
95-100%	A(h)
90-94%	A
85-89%	B+
80-84%	B
75-79%	C+
70-74%	C
<70%	F

Attendance:

Students are expected to attend at least 80% of all scheduled learning activities. Attendance in the class will be recorded. Students attended 80% or more will be awarded with 10% on total scoring system. Please note that absences due to illness or misadventure will be factored into the 20% of allowable absences if informed respective faculty or the Dean of Students.

Policies:

Professional Demeanor

The student should be thoughtful and professional when interacting with faculty and other students. Inappropriate behavior includes the use of offensive language, gestures, or remarks with sexual overtones. Students should maintain a neat and clean appearance, and dress in attire that is generally accepted as professional.

Honesty

Students are expected to demonstrate honesty and integrity in all aspects of their education and in their interactions with faculty, administration, physicians, patients, and fellow students. They will not cheat, plagiarize, or assist others in the commission of these acts.

Faculty and Office Hours:

Dr. Eric Audain, Assistant Professor and Course director
Student can schedule an appointment by email.