IMPERIAL VALLEY COLLEGE

Basic Course Information

Semester:	**Winter 2025**	Instructor Name:	**Dr. Omar Alshykhly**
Course Title & #:	**Chemistry 200 General Inorganic Chemistry I**	Email:	**Omar.alshykhly@imperial.edu**
CRN #:	**15020**	Webpage (optional):	
Classroom:	**2716**	Office #:	**2700**
Class Dates:	**01/02/2025 to 02/03/2025**	Office Hours:	
Class Days:	**MTWRF**	Office Phone #:	**760-355-6298**
Class Times:	**10:00 am – 5:15 pm**	Emergency Contact:	**Department Secretary 760-355-6155**
Units:	**5**	Class Format/Modality:	**Face to face**

Course Description

Basic principles and calculations of chemistry with emphasis on stoichiometry and dimension analysis applied to various problem types. Fundamental principles and theory of atomic and molecular structure as related to bonding and molecular geometry. Study of kinetic molecular theory, the first law of thermodynamics, periodic relationships of the elements, physical states of matter, solution chemistry, and oxidation-reduction. The laboratory is closely related to lecture topics and includes methods of classical experimentation as well as certain instrumental analysis. (C-ID CHEM 110) (CSU, UC)

Course Prerequisite(s) and/or Corequisite(s)

CHEM 100 – Introduction to Chemistry (Historical)

Student Learning Outcomes

Upon course completion, the successful student will have acquired new skills, knowledge, and or attitudes as demonstrated by being able to: Solve chemical problems using modern atomic theory. (ILO2, ILO4). Perform chemical experiments in a scientific manner using proper techniques, data analysis, and safety equipment. (ILO2, ILO3, ILO4).

Course Objectives

Upon satisfactory completion of the course, students will be able to:

1. Students will demonstrate ability to perform dimensional analysis calculations as they relate to problems involving percent composition and density.
2. Student will write chemical formulas, name inorganic compounds, and demonstrate a knowledge of basic atomic theory
3. Students will relate chemical equations and stoichiometry as they apply to the mole concept, molarity, and acid-base titrations. Student will derive formulas from percent composition.
4. Students will identify the basic types of chemical reactions including precipitation, neutralization, and oxidation-reduction.
5. Students will demonstrate knowledge of atomic structure and quantum mechanics and apply these concepts to the study of periodic properties of the elements.

6. Students will relate the general concepts of atomic structure to a study of ionic bonding.
7. Students will relate the general concepts of covalent bonding and molecular structure.
8. Students will demonstrate the first law of thermodynamics both in theoretical and practical contexts and apply the theory to the solution of Hess' Law.
9. Students will manipulate the various gas laws in both theory and practice to solve mathematical problems relating to the behavior of both ideal and non-ideal gases.
10. Students will describe the general properties of liquids and solids including intermolecular attractions and phase changes.
11. Students will relate the general properties of solutions and employ knowledge of concentration to explain colligative properties.
12. Students will investigate the phenomenon of vapor pressure.
13. Student will demonstrate knowledge of computer-assisted methods of data acquisition, analysis and presentation.

Textbooks & Other Resources or Links

1. Our free online textbook " Chemistry 2e by Flowers, Theopold and Langley, OpenStax"
   You can get the book either through LibreText:
   Chemistry 2e (OpenStax) - Chemistry LibreTexts
   Or through Openstax:
   https://openstax.org/books/chemistry-2e/pages/preface
   or even you can access it through Aktiv app (online assignments software)

2. Lab Manual Chemistry 200 Laboratory Manual; purchase from the STEM/Chem club, $20.00
3. Safety Glasses or Goggles: must be acid and heat resistant. These must comply with:
   a. Meet ANSI* Z87.1-2003 standards.
   b. Polycarbonate lens
   c. Wraparound protection offers a wide field of vision.
4. Nonprogrammable Calculator: a highly recommended calculator is the Texas Instruments TI36X Solar Scientific Calculator (not the "TI36X-Pro" or the TI-30Xa).
5. 5 Scranton for your midterm and final exams an 882-E,

Course Requirements and Instructional Methods

- **Lecture Homework and Quizzes**: For each chapter, you will have some homework and quizzes assignment through canvas. More details **will be discussed on the first day of the class.**
- **Lecture Exams**: There will be 4 exams in-person, the lowest exam is dropped, and so only 3 exams count. No **make-up** exams. Exams will be graded and then returned as soon as possible.
- **Safety** in the laboratory is of utmost importance - those who do not follow the outlined safety procedures will either have points deducted from their lab score or asked to leave the lab during that lab. Closed toed shoes and goggle are required.
- **Laboratory**: All experiments are required to be prepared as **formal lab write-ups** as described in the lab notebook handout (which you will receive in class). The core of the write-up in your notebook will include the title, objective, and procedures, and must be done **prior** to the start of the lab. In order to begin an experiment, the instructor must initial the pre-lab. This is necessary to

ensure safety in the lab. In addition, each lab experiment will require a data, calculations, and discussion write-up that is completed in your lab notebook. There are no lab make-ups. Unless otherwise instructed, each student will work on experiments individually.

- **Lab Notebook:** You will not be allowed to start an experiment until the Prelab is completed and checked. Experiments are due as directed; late experiments are acceptable with a loss of points (one point per lab point) up to the lab before the lab exam. Your lab notebook can be used on lab exams.
- **Completed experimental lab write-**ups are due the following lab meeting however if there are problems with calculations a second lab day is allowed for turning labs in for grading.
- **Lab Exams**: Lab exams will contain problems and/or explanation type questions based on the preceding laboratory experiments. Your Lab Notebook can be used during the Lab Exams. There are 2 Lab exams each of which count toward your course grade. No Make-up Lab exams will be allowed. This Point Total is added to your Lecture Score to obtain a total score that includes both the lecture and lab component of this class.
- **Lab Cleanup** The entire class will lose points if the sinks, scales, hoods, floor are not clean, chemical caps not screwed back on, and chairs not put in place. The class can lose up to 10 points per lab.
- **Final Exam**: The Final Exam is comprehensive. There are **no make-ups** because the date and time of the Final is the last day of class.
- **Out of Class Assignments**: The Department of Education policy states that one (1) credit hour is the amount of student work that reasonably approximates not less than one hour of class time and two (2) hours of out-of-class time per week over the span of a semester. WASC has adopted a similar requirement.
- **You must** (1) remember your locker combination-after locker check-in, (2) bring goggle or eye safety glasses, (3) closed toed shoes to be in the lab; you are not furnished these and (4) calculators for exams. Forgetting to do so will cost you 5 points.

Course Grading Based on Course Objectives

- **Study Hints:** Chemistry is a very demanding course. Depending on your background, you will need to spend 1-4 hours outside of lab to get your work done. Missing a lecture usually means your grade falls by ½ grade.
- **Do not fall behind so:**
  - **Go to office hours**
  - **Get a tutor**
  - **Form study groups**
- **No Gifts, cards, or food; all will be refused. Spend your time and effort studying.**
- **Don't try to cram! It doesn't work.**
- **Keep up!**

Homework & quizzes Assignments	20%

Two Lab exams	10%
Midterm exams	30%
Lab Experiments	30%
Lecture final exam	10%
Total	100%

Letter grades will be assigned based upon the % of points earned: Grading scale, A: 90-100%; B: 80-89%, C: 70-79%, D: 60-69, F: <59.

Academic Honesty (Artificial Intelligence -AI)

IVC values critical thinking and communication skills and considers academic integrity essential to learning. Using AI tools as a replacement for your own thinking, writing, or quantitative reasoning goes against both our mission and academic honesty policy and will be considered academic dishonesty, or plagiarism unless you have been instructed to do so by your instructor. In case of any uncertainty regarding the ethical use of AI tools, students are encouraged to reach out to their instructors for clarification.

The following kinds of honesty violations and their definitions are not meant to be exhaustive. Rather, they are intended to serve as examples of unacceptable academic conduct.

- Plagiarism is taking and presenting as one's own the writings or ideas of others, without citing the source. You should understand the concept of plagiarism and keep it in mind when taking exams and preparing written materials. If you do not understand how to "cite a source" correctly, you must ask for help.
- Cheating is defined as fraud, deceit, or dishonesty in an academic assignment, or using or attempting to use materials, or assisting others in using materials that are prohibited or inappropriate in the context of the academic assignment in question.

Anyone caught cheating or plagiarizing will receive a zero (0) on the exam or assignment, and the instructor may report the incident to the Campus Disciplinary Officer, who may place related documentation in a file. Repeated acts of cheating may result in an F in the course and/or disciplinary action. Please refer to the General Catalog for more information on academic dishonesty or other misconduct. Acts of cheating include, but are not limited to, the following: (a) plagiarism; (b) copying or attempting to copy from others during an examination or on an assignment; (c) communicating test information with another person during an examination; (d) allowing others to do an assignment or portion of an assignment; (e) using a commercial term paper service.

Course Policies

Attendance

- A student who fails to attend the first meeting of a class or does not complete the first mandatory activity of a class will be dropped by the instructor as of the first official meeting of that class. Should

readmission be desired, the student's status will be the same as that of any other student who desires to add a class. It is the student's responsibility to drop or officially withdraw from the class. See General Catalog for details.

- **Regular attendance in all classes is expected of all students. A student whose continuous, unexcused absence exceed the number of hours the class is scheduled to meet per week may be dropped; Chemistry 100, four units, is six hours and all other Chemistry courses, five units, are nine hours.** For online courses, students who fail to complete required activities for two consecutive weeks may be considered to have excessive absences and may be dropped.
- **Lab Attendance** is recorded just as lecture attendance. **If you miss** the safety or introduction of the lab, you will not be able to attend that lab, and there are not lab makeups. Y**ou will receive no points for a lab you miss. Two (2) unexcused absences and you will be dropped. You may be asked to have your lab signed by the Instructor, at the beginning and end of the lab to receive any credit. Since Closed Toed Shoes are mandatory for Lab, not having closed toed shoes will not count as an absence, and you will NOT receive credit for the lab.**
- Absences attributed to the representation of the college at officially approved events (conferences, contests, and field trips) will be counted as 'excused' absences.

Classroom Etiquette

- Electronic Devices: Cell phones and electronic devices must be turned off and put away during class, unless otherwise directed by the instructor.
- Food and Drink are prohibited in all classrooms. Water bottles with lids/caps are the only exception. Additional restrictions will apply in labs. Please comply as directed by the instructor.
- Disruptive Students: Students who disrupt or interfere with a class may be sent out of the room and told to meet with the Campus Disciplinary Officer before returning to continue with coursework. Disciplinary procedures will be followed as outlined in the General Catalog.
- Children in the classroom: Due to college rules and state laws, no one who is not enrolled in the class may attend, including children.

IVC Student Resources

Student Services

Imperial Valley College offers various services in support of student success. The following are some of the services available for students. Please speak to your instructor about additional services which may be available.

- CANVAS LMS. Canvas is Imperial Valley College's main Learning Management System. To log onto Canvas, use this link: Canvas Student Login. The Canvas Student Guides Site provides a variety of support available to students 24 hours per day. Additionally, a 24/7 Canvas Support Hotline is available for students to use: 877-893-9853.
- Learning Services. There are several learning labs on campus to assist students through the use of computers and tutors. Please consult your Campus Map for the Math Lab; Reading, Writing & Language Labs; and the Study Skills Center.

- Library Services. There is more to our library than just books. You have access to tutors in the Study Skills Center, study rooms for small groups, and online access to a wealth of resources.

Disabled Students Programs and Services (DSPS)
Any student with a documented disability who may need educational accommodations should notify the instructor or the Disabled Student Programs and Services (DSP&S) office as soon as possible. The DSP&S office is located in Building 2100, telephone 760-355-6313. Please contact them if you feel you need to be evaluated for educational accommodations.

Student Counseling and Health Services
Students have counseling and health services available, provided by the pre-paid Student Health Fee.

- **Student Health Center**. A Student Health Nurse is available on campus. In addition, Pioneers Memorial Healthcare District provide basic health services for students, such as first aid and care for minor illnesses. Contact the IVC Student Health Center at 760-355-6128 in Room 1536 for more information.
- **Mental Health Counseling Services**. Short-term individual, couples, family and group counseling services are available for currently enrolled students. Services are provided in a confidential, supportive, and culturally sensitive environment. Please contact the IVC Mental Health Counseling Services at 760-355-6310 or in the building 1536 for appointments or more information.

Veteran's Center
The mission of the IVC Military and Veteran Success Center is to provide a holistic approach to serving military/veteran students on three key areas: 1) Academics, 2) Health and Wellness, and 3) Camaraderie; to serve as a central hub that connects military/veteran students, as well as their families, to campus and community resources. Their goal is to ensure a seamless transition from military to civilian life. The Center is located in Building 600 (Office 624), telephone 760-355-6141.

Student Equity Program

- The Student Equity Program strives to improve Imperial Valley College's success outcomes, particularly for students who have been historically underrepresented and underserved. The college identifies strategies to monitor and address equity issues, making efforts to mitigate any disproportionate impact on student success and achievement. Our institutional data provides insight surrounding student populations who historically, are not fully represented. Student Equity addresses disparities and/or disproportionate impact in student success across disaggregated student equity groups including gender, ethnicity, disability status, financial need, Veterans, foster youth, homelessness, and formerly incarcerated students. The Student Equity Program provides direct supportive services to empower students experiencing insecurities related to food, housing, transportation, textbooks, and shower access. We recognize that students who struggle meeting their basic needs are also at an academic and economic disadvantage, creating barriers to academic success and wellness. We strive to remove barriers that affect IVC students' access to education, degree and certificate completion, successful completion of developmental math and English courses, and the ability to transfer to a university. Contact: 760.355.5736 or 760.355.5733 Building 100.

- The Student Equity Program also houses IVC's Homeless Liaison, who provides direct services, campus, and community referrals to students experiencing homelessness as defined by the McKinney-Vento Act. Contact: 760.355.5736 Building 100.

Student Right

Students have the right to experience a positive learning environment and to due process of law. For more information regarding student rights and responsibilities, please refer to the IVC General Catalog.

Anticipated Class Schedule/Calendar

*****Subject to change without prior notice*****

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Day	Date	Lecture	Laboratory part 1	Laboratory part 2
1	1/2	Syllabus & Ch. 1	Intro, Safety, Lockers	Lab report notebook
2	1/3	Chapter 1 Essential Ideas	Chapter 2 Atoms, Molecules, and Ions	Ch. 2 cont.
3	1/6	Chapter 3 Composition of Substances and Solutions	01_Measurements exp.	01_Measurements exp.
4	1/7	Ch. 3 cont.	04_Nomenclature exp.	Mg and O experiment TBD
5	1/8	Chapter 4 Stoichiometry of Chemical Reactions	Ch. 4 cont.	Lecture Exam 1 (Ch. 1 & 2)
6	1/9	Ch 4 cont.	05_NIE exp.	05_NIE
7	1/10	Ch. 4 cont.	02_Controlling limiting reactants	02_Controlling limiting reactants
8	1/13	Chapter 5 Thermochemistry	06_Oxidation Reduction day 1: Exp	06_Oxidation Reduction day 2: Exp
9	1/14	Ch. 5 cont.	Ch.5 cont.	TBD
10	1/15	Chapter 6 Electronic Structure and Periodic Properties of Elements	Ch. 6 cont	07_Atomic Orbital Shapes exp.
11	1/16	Ch. 6 cont	Lab Exam 1	Lecture Exam 2 (ch. 3, 4, & 5)
12	1/17	Chapter 7 Chemical Bonding and Molecular Geometry	08_Periodic Properties and Electron Configurations exp	08_Periodic Properties and Electron Configurations exp.
13	1/20	Holiday	Holiday	Holiday
14	1/21	Ch 7 cont.	Ch 7 cont. Lecture	11_VESPR exp.
15	1/22	Chapter 9 Gases	Ch. 9 cont	Lecture Exam 3 (ch. 6 & 7)
16	1/23	Chapter 13 Fundamental Equilibrium Concepts	03_Chemistry of Oxygen exp.	03_Chemistry of Oxygen exp.
17	1/24	Ch. 13 cont	12_Titration Day 1	12_Titration Day 2
18	1/27	Ch. 13 cont.	09_UV-Vis Iron Complex	09_UV-Vis Iron Complex exp.
19	1/28	Chapter 14 Acid-Base Equilibria	Ch. 14 cont	13_Acid Base Salt exp.

20	1/29	Ch. 14 cont.	Lab exam 2	Lecture exam 4 (Ch. 9, 13, & 14)
21	1/30	Chapter 15 Equilibria of Other Reaction Classes	Ch. 15 cont	14_Ka exp.
22	1/31	Ch. 15 cont.	TBD	TBD
23	2/3	Final exams	Final exams	Final exams