Basic Course Information

Semester:	**Spring 2025**	Instructor Name:	**Dr. Behrang Madani**
Course Title & #:	**Chemistry 200 General Inorganic Chemistry I**	Email:	**Behrang.madani@imperial.edu**
CRN #:	**20504**	Webpage:	**http://spaces.imperial.edu/behrang.madani/default.html**
Classroom:	**Lecture online & Lab room 2715**	Office #:	**2773**
Class Dates:	**Feb 10 to Jun 6**	Office Hours:	**MW: 10:00am – 11:00 am online Zoom** **TR: 11:30am – 12:30pm online Zoom** https://imperial-edu.zoom.us/j/89758629835
Class Days:	**TR (Lab), Online (Lec)**	Office Phone #:	**(760) 355-6477**
Class Times:	**T: 8:00 am-11:10 am (Lab)** **R: 8:00 am-11:10 am (Lab)**	Emergency Contact:	**Department Secretary (760) 355-6155**
Units:	**5.0**		

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, C-ID: CHEM 120S with CHEM 202) (CSU/UC). **Prerequisites:** Chem 100

Student Learning Outcomes

Upon course completion, the successful student will have acquired new skills, knowledge, and or attitudes as demonstrated by being able to:

1. Solve chemical problems using modern atomic theory. (ILO2, ILO4)
2. 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. Student 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. Student 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. Student will identify the basic types of chemical reactions including precipitation, neutralization, and oxidation-reduction.
5. Student will demonstrate knowledge of atomic structure and quantum mechanics and apply these concepts to the study of periodic properties of the elements.
6. Student will relate the general concepts of atomic structure to a study of ionic bonding.
7. Student will relate the general concepts of covalent bonding and molecular structure.
8. Student will demonstrate the first law of thermodynamics both in theoretical and practical contexts and apply the theory to the solution of Hess' Law.
9. Student 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. Student will describe the general properties of liquids and solids including intermolecular attractions and phase changes.
11. Student will relate the general properties of solutions and employ knowledge of concentration to explain colligative properties.
12. Student 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. There are two sites to get our textbook:
a. (Preferred) https://chem.libretexts.org
• For the textbook: click on (in above link) < Bookshelves/General Chemistry/Book: Chemistry (OpenSTAX)>
• Exercises: click on (in above link) <Homework Exercises/Exercises: General Chemistry/Exercises: OpenStax>

b. Chemistry. Paul Flowers, Klaus Theopold, Richard Langley. 3rd ed. Openstax (2016)
Textbook: Chemistry. Paul Flowers, Klaus Theopold, Richard Langley. *3rd ed. Openstax* (2016)
https://openstax.org/details/books/chemistry

2. Lab Manuals: General Chemistry on the Laboratory; Postma et al, 8th ed. 2017, ISBN-10: 1319032524
3. Supplemental Lab Manual: Chemistry 200 Laboratory Packet; is purchased from the STEM/Chem club ($20)
4. Safety goggles ($5 - $10; needed on second class day). The goggles must completely enclose the area around the eyes.
5. Non-programmable scientific calculator ($15 - $25): Ti-30X IIB or Ti-30X IIS are recommended. You will need to use logarithms,
functions, exponents, scientific notation, etc. **Bring this to all lecture and lab meetings.**
6. Five (5) Scantron Sheets Form No. 882-E for exams and final.
7. Close-toed shoes for labs
8. Registration with www.saplinglearning.com for online HW ($40) – requires credit card

Course Requirements and Instructional Methods

Exams: You have 5 exams including the final exam (see your course schedule). Some practice exams will be made available before each exam. We will have some review sessions before each test and final exam. There are no make-up exams or lab classes. Your lowest test grade, excluding the final test grade, will be dropped. If you miss a test, the test will be dropped.

Homework: Each homework has a due date always finishes at 11:59pm. The goal is to give you sufficient practice to enable you to be successful on the examinations. Homework problems are found online using Canvas. The lowest homework scores will be dropped. You have 3 attempts per question to answer correctly. There will be no penalty for correctly answering on the first, second, or third attempt. There is no penalty for viewing the hint. In order to grade your answer and find out if you answered correctly, you should press "CHECK ANSWER." If you wish to switch to another question without checking the answer for the current question, you can press "NEXT" or use the map at the top right corner of the question. After the due date, the homework assignment cannot be worked on but can be viewed. Late homework, lab reports, projects, etc will not be accepted and you will have earned zero for that work.

Lab Experiments: See the "*Laboratory safety rules and grading*" (next part). **No make-up lab.**

iClicker: Each student will have an iClicker remote. Students will register their iClicker remote during lecture near the beginning of the semester under the guidance of the professor. **iClicker questions are used in every lecture.** There is no make-up for iClicker questions.

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 3 Lab exams Fall and Spring but only 2 Lab exams during Winter and Summer, 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.

Final Exam: The Final Exam is comprehensive, and it will be in person. There are **no make-ups** because the date and time of the Final is the last day of class.

Laboratory safety rules and grading

1) **Lab reports** will have a value of 10 points and each will be graded. Individual reports will be turned in at the beginning of the next lab session after it was started. No late work is accepted – except for absences. Use a non-erasable ink to prepare your lab report. 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 insure 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, unless it is lab exam day at which point the lab notebooks are due and a second grace day is not allowed. After that **1 pt will be lost per lab day late.** NOTE, the definition of a Lab Day is at the end of the Lab period since labs are ONLY graded during lab, and never between labs; in other words, the next lab day starts at the end of that day lab or any lab graded after that lab is officially over is considered the next lab day. Lab notebooks are handed in after each lab exam to get a tally of points, however ungraded labs are considered late on lab exam day.

2) **Safety rules:** At all times, of ANY experimentation, ALL students must wear safety goggles and enclosed shoes.
- Failure to wear goggles over the eyes – 2 points deducted from your lab report for each infraction
- Failure to wear enclosed shoes – you will be asked to leave (note that there are no lab make ups)

3) **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 3 Lab exams Fall and Spring but only 2 Lab exams during Winter and Summer, 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.

4) In addition to the department safety rules, we, your instructors, have some of our own.
- **Do not leave a Bunsen burner lit and unattended.** Five points will be deducted from all partner's report.
- **Do not wear tank tops or sleeveless tops.** You will be asked to leave. You may however, wear a lab coat to protect yourself.

Get Started

Please Find your course on Canvas and go to the home page. Click on "Start Here" and it will send you to Modules section. Study lab safety rules and list of the lab equipment. Then, register for Achieve website using the link on Canvas to start doing the assignments. **Please do not go directly to Achieve website and always open the Achieve website via Canvas.**

How to contact your Instructor:

- Email me any time at: behrang.madani@imperial.edu
- I will respond to your email within 24 hours at any day during the week
- Use Pronto on canvas to chat with me
- Attend the office hours through zoom
- You may need help from the IVC library (Links to an external site.) for technical support

How I Will Contact You

I will be an active participant in this course. You can expect that I will reach out to you many times each week, via the following methods:

- **Announcements**: I typically post an announcement at the beginning of the week, and sometimes the middle of the week. Keep an eye out for this important information!
- **Canvas Inbox messages**: I will occasionally reach out via the Inbox to check in with you.

- **Videos and other stuffs**: I will post on canvas a lecture video, PowerPoint slides, problem sets and more each week for each chapter.

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**

Homework	17.05%
Lab report	11.36%
Lab exams	20.46%
Lecture exams	34.09%
Final exam	17.05%

Your final grade will be assigned based on following manner:

90% – 100%	A
80% - 89%	B
70% - 79%	C
60% - 69%	D
Below 59%	F

Attendance

- A student who fails to attend the first meeting of a class or does not complete the first mandatory activity of an online 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 absences exceed the number of hours the class is scheduled to meet per week may be dropped. 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.
- Absences attributed to the representation of the college at officially approved events (conferences, contests, and field trips) will be counted as 'excused' absences.
- Absences during Lab Classes, or leaving during Lab Classes automatically result in a grade of zero (0) for the Lab Experiment.

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, only students enrolled in the class may attend; children are not allowed.
- **Add/Drop**: it is the responsibility of the student to take the necessary steps to add and/or drop the class by the college deadlines.
- **Leaving during lecture or lab** is considered an unexcused absence. If you have to leave anytime during class, other than established break times, you must inform your instructor.

Academic Honesty

Academic honesty in the advancement of knowledge requires that all students and instructors respect the integrity of one another's work and recognize the important of acknowledging and safeguarding intellectual property.

There are many different forms of academic dishonesty. 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.

Additional 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 Student 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 1200, telephone 760-355-6434. 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.

Extended Opportunity Program and Services (EOPS)

The Extended Opportunity Program and Services (EOPS) offers services such as priority registration, personal/academic counseling, tutoring, book vouchers, and community referrals to qualifying low-income students. EOPS is composed of a group of professionals ready to assist you with the resolution of both academic and personal issues. Our staff is set up to understand the problems of our culturally diverse population and strives to meet student needs that are as diverse as our student population.

Also under the umbrella of EOPS our CARE (Cooperative Agency Resources for Education) Program for single parents is specifically designed to provide support services and assist with the resolution of issues that are particular to this population. Students that are single parents receiving TANF/Cash Aid assistance may qualify for our CARE program, for additional information on CARE please contact Lourdes Mercado, 760-355- 6448, lourdes.mercado@imperial.edu.

EOPS provides additional support and services that may identify with one of the following experiences:

- Current and former foster youth students that were in the foster care system at any point in their lives
- Students experiencing homelessness
- Formerly incarcerated students

To apply for EOPS and for additional information on EOPS services, please contact Alexis Ayala, 760-355-5713, alexis.ayala@imperial.edu.

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 Rights and Responsibilities

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.

Information Literacy

Imperial Valley College is dedicated to helping students skillfully discover, evaluate, and use information from all sources. The IVC Library Department provides numerous Information Literacy Tutorials to assist students in this endeavor.

Important dates

Important Dates and Deadlines

NOTE: The deadlines below are for full-term classes. Deadlines for short-term classes vary with the length of the class. Most deadlines are mandated in the CA Code of Regulations and are a percentage of the length of the class.

Beginning October 1	New and former students may file an admission application for Winter/Spring 2025 and/or Summer/Fall 2025.
November 4	Priority registration begins
February 9	Residency determination date.
February 10	**Spring classes begin.**
February 10 - 22	**Late Registration. Beginning on the first day each class meets, add authorization code from instructor required to register for that class, filled or open.**
February 14	**Holiday** – Lincoln's Birthday. No classes.
February 17	**Holiday** – Washington's Birthday. No classes.
February 22	**Deadline to register for full-term courses.** **Deadline to drop full-term classes and be eligible for a Refund.** **Deadline to select P/NP grading option for courses with that option.**
February 23 *Sunday*	**Deadline to drop Spring full-term classes without a W and no fees.**
February 24	Ticketing for parking violations in student spaces on main campus begins. Note: tickets are issued for reserved (faculty/staff), disabled, metered, 15-minute, and no-parking spaces year around.
March 7	**Financial Aid Freeze Date -** Complete withdrawal before this date will require financial aid eligibility recalculation and funds may be owed.
April 21 – 25	**Spring Recess.** No classes.
April 11	**Deadline to submit *Petition for Graduation* for degree to be awarded for Spring and Summer 2024 and participate in Commencement.** Students must meet with a Counselor and have an evaluation completed before this date.
April 16	**Return to Title IV Drop Date -** Units enrolled as of this date will be used to determine enrollment status for financial aid payment.
May 10 ***Saturday***	**Deadline to drop full-term classes with a W.** **(Note: This deadline date is not for short-term classes.)**
May 26	**Holiday –** Memorial Day. No classes.
June 2 - 6	Final Exams.
June 6	**Deadline to apply to receive degree or certificate at end of Spring Intersession and not participate in Commencement.** Completed petition must be received in Admissions & Records Office by this date. Students must meet with a Counselor and have an evaluation completed and petition signed before this date. **STUDENTS ARE NOT ELIGIBLE TO PARTICIPATE IN GRADUATION CEREMONY.**
June 7	Commencement Ceremony

Anticipated Class Schedule/Calendar

	Days	Lecture (Online)	Tuesday (Room 2015)	Thursday (Room 2715)
1	Feb 11- Feb 13	Syllabus and Fundamentals A & B (Matter & Measurement) and (Electrons, Atoms, & Compounds)	Safety and Check in, Problem set 1	M-1 Measurements, Problem set 1
2	Feb 18 – Feb 20	Fundamental C (Chemical Reactions)	Lab Measurements – Handout Problem sets 2 & 3	M-A Nomenclature Problem sets 2 & 3
3	Feb 25 – Feb 27	Fundamentals D, E (Chemical Composition & Limiting Reagents)	M-2 Mass & Volume Problem Set 2, 3	Lab Chemical reactions - Handout
4	Mar 4 – Mar 6	Fundamentals F, G (Redox Reactions & Solutions)	IVC 5 Formula of a Hydrate Problem set 4	**Lecture Exam 1 (Fun. A-E)**
5	Mar 11 – Mar 13	Fundamental H (Electrons in Atoms) Focus 1 (Atoms)	M-18 Net Ionic Equations Problem Set 9	Lab 10: Decomposition Problem set 7-8
6	Mar 18 – Mar 20	Focus 1 (Atoms)	M-34 Reduction Oxidation Problem set 10	Lab Exam 1
7	Mar 25 – Mar 27	Focus 2 A-D (Chemical Bonds) Focus 2 E-F (molecular shape)	M-34 Reduction Oxidation Problem Set 10	**Lecture Exam 2 (Fun. F-H and Focus 1)**
8	Apr 1 – Apr 3	Focus 2 E-F (molecular shape) Focus 3 A-F (Gases)	M-14 Heat Capacities of Metals	M-B Lewis Structures
9	Apr 8 – Apr 10	Focus 3 A-F (Gases) Focus 3 G-H (Liquid & Solids)	Lab 15: Gas Law Problem Set 11	IVC 4 Titration (Part1)
10	Apr 15 – Apr 17	Focus 4 (Thermodynamics)	IVC 4 Titration (Part 2) Problem Set 12	Lab Exam 2
11	Apr 22 – Apr 24	Spring Break – No Classes		
12	Apr 29 – May 1	Focus 4-5 (Thermodynamics & Chemical Equilibrium)	IVC 4 Titration (Prat 3) Problem Set 13	**Lecture Exam 3 (Focus 2-3)**
13	May 6 – May 8	Focus 5 (Chemical Equilibrium)	M-23 Equilibrium Problem Set 14	M-23 Equilibrium Problem Set 14
14	May 13 – May 15	Focus 6 (Acids & Bases)	Lab pH of Commercial Products - Handout	IVC 9 Problem Set 15
15	May 20 – May 22	Focus 6-7 (Acids & Bases 7 Aqueous Equilibrium)	IVC 10	**Lecture Exam 4 (Focus 4-5)**
16	May 27 – May 29	Focus 7 (Aqueous Equilibrium)	Problem set 15	Lab Exam 3
17	Jun 3 – Jun 5	Tue: Review for final	Review for final and Lab check out	**Final Exam**

Note: The course syllabus is intended to provide students with basic information concerning the course. The syllabus can be viewed as a "blueprint" for the course; **changes in the syllabus can be made and students will be informed** of any substantial changes concerning exams, grading or attendance policy and/or changes to reading or homework assignments.