

## Basic Course Information

Semester:	<b>Spring 2022</b>	Instructor Name:	<b>Dr. James Fisher</b>
Course Title & #:	<b>Chemistry 100 General Chemistry</b>	Email (preferred):	<b>jim.fisher@imperial.edu</b>
CRN #:	<b>20037</b>	Office #:	<b>2771</b>
Classroom:	<b>2715</b>	Office Hours:	<b>Campus, 2716 M&amp;W 7:30-8:00AM, 2715, Tu-Th 1-1:30PM and 2715 7:30-8:00AM. Also online by appointment.</b>
Class Dates:	<b>2/14/2022-6/10/2022</b>	Office Phone #:	<b>760-355-6524</b>
Class Days:	<b>TR</b>	Emergency Contact:	<b>Department Secretary 760-355-6155</b>
Class Times:	<b>8:00am-12:50pm</b>	Last day to withdraw	<b>5/14/2022</b>
Units:	<b>5</b>	Zoom	<b><a href="https://cccconfer.zoom.us/j/9867876993">https://cccconfer.zoom.us/j/9867876993</a></b>

## Course Description

Elementary principles of general inorganic chemistry with an introduction to organic and biochemistry. Previous science background is recommended but not required. This course is designed for non-science majors and students who need only a one-semester general chemistry course, and also for students entering a paramedical and allied health fields, and industrial applications such as power plants. This course will satisfy the prerequisite for CHEM 100. (CSU)(UC credit limited. See a counselor.)

## 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. Calculate English and metric unit conversions and measurements using dimensional analysis.
2. Write symbols for elements and know common ionic charges.
3. Derive and write formulas and names for chemical compounds.
4. Write and balance common chemical equations and identify reaction types.
5. Solve stoichiometric problems, including their solutions using dimensional analysis.
6. Describe atomic structure including isotopes, periodicity and molecular structure in terms of subatomic particles.

7. Identify types of energy and calculate specific heat; identify energy involved in change of state including heat of vaporization and predict behaviors in cooling curves; calculate caloric and nutritional values of various foods.
8. Describe gas behavior and solve problems involving the various gas laws.
9. Define and identify unsaturated, saturated, and supersaturated solutions differentiate between each type of solution.
10. Calculate solution concentration of various types including dilutions.
11. Differentiate between solution, suspension, and colloid and osmolarity, isotonic, hypotonic and hypertonic solutions.
12. Define the three basic concepts (Arrhenius, Brønsted-Lowry and Lewis) of acids and bases and perform titration experiments and calculate pH.
13. Describe nuclear processes and write nuclear equations using the subatomic particles involved and identify health factors and risks involved.
14. Demonstrate a knowledge of hydrocarbons (saturated and unsaturated) and will describe their properties and reactions.
15. Identify isomers and name hydrocarbon compounds.
16. Identify certain carbohydrates; lipids, and protein structures as they relate to biochemistry.

### Textbooks & Other Resources or Links

1. Our online textbook:
  - a. (Preferred) <https://chem.libretexts.org>
    - For the textbook: click on (in above link) < Bookshelves/Introductory & GOB Chemistry/Book: Beginning Chemistry (Ball)>
    - Exercises: click on (in above link) <Homework Exercises/Exercises: General, Organic, and Biological Chemistry/Exercises: Ball et al. (GOB)>
2. Chemistry 100 Lab Manuals is free Spring 2022.
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. Non-programmable Calculator: a highly recommended calculator is the Texas Instruments TI36X Solar Scientific Calculator (not the “Pro”) or the TI-30Xa.
5. Scranton for your final exam an 882-E, for 100 answers.
6. Additional Required Supplies: Closed toed shoes.

### Course Requirements and Instructional Methods

- **Lecture Quizzes:** A short quiz on lecture material will periodically be given at the beginning of class. Quizzes are worth 5-15 points each with **no makeup** quizzes allowed. Quizzes will not be given on lecture exam days.
- **Lecture Exams:** Under normal circumstances (*Fall, Spring or 16-week semester*), there will be 6 exams, the lowest exam is dropped, and so only 5 exams count. No **make-up** exams. Exams will be graded and then returned as soon as possible. During the *Summer* or *Winter* sessions (5 or 6-week intersession), only 5 exams are given, and no exams are dropped. Only non-programable calculators are allowed. **Hybrid classes vary.**
- **Post lecture group worksheet:** After lecture, groups will complete the worksheet for that lecture, these are handed in at the end of the lecture or assigned time for the worksheet and are

worth 5 pts for each worksheet completed by the group.

- **Final Exam:** The Final Exam is comprehensive. Final exam questions are in multiple-choice format. You must purchase an 882-E, 50 questions per side, Scranton for the Final Exam. There are **no make-ups** because the date and time of the Final is the last day of class. You are allowed to use a cheat-sheet on the final; one letter-sized page, use of the front and back, in your hand- writing, no photocopying, or printer-texted. Only non-programable calculators are allowed.
- **Lab Exam:** The lab exam will contain problems and/or explanation type of questions based on the all of your laboratory experiments. There is one Lab exams, which counts toward your course grade. See Course Schedule for Lab Exam date. No Make-up Lab exams are given. Only non-programable calculators are allowed. **Hybrid classes vary**
- **Lab Cleanup** Clean your area up. 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. Up to 10 points could be deducted for not cleaning the lab up.
- **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.
- **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.
- **Zoom face-to-face:** Zoom is for a video face-to-face instruction; we can work on homework problems etc. In Canvas, on the left banner is a link to “ConferZoom.” Since this is new, and I don’t know when students want to video/conference call, first contact me (Cranium Café/email) then we can initiate a Zoom Conference.
- **Fisher Zoom:** <https://cccconfer.zoom.us/j/9867876993>

### 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 a letter grade.
- **Do not fall behind so:**
  - **Go to office hours; usually 30 minutes before class starts**
  - **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!!**

In-class handouts	15 @ 5	65 pts
Exams	5 @ 100	500 pts
Labs	9 @ 10	90 pts
Lab Cleanup	9 @10	(“-“ if necessary)
Locker Checkout	20 pts	
Lab Exam	100 pts	
Final Exam	200 pts	
TOTAL (about)	≈1000 pts	

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.

## 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 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, is 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.
- Absences attributed to the representation of the college at officially approved events (conferences, contests, and field trips) will be counted as 'excused' absences.
- 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 no lab makeups.
  - You 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, but you will NOT receive credit for the lab. Locker checkout counts as 2 labs or 20 points.

## Classroom Etiquette

- This is a college classroom; disruptive or disrespectful behavior will not be tolerated. It is NOT OK to be late, sleep, talk, and whisper during class or do homework for another class. Class will end on time, so do not pack up early and disrupt the class.
- 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.

## Online Netiquette

- What is netiquette? Netiquette is internet manners, online etiquette, and digital etiquette all rolled into one word. Basically, netiquette is a set of rules for behaving properly online.
- Students are to comply with the following rules of netiquette: (1) identify yourself, (2) include a subject line, (3) avoid sarcasm, (4) respect others' opinions and privacy, (5) acknowledge and return messages promptly, (6) copy with caution, (7) do not spam or junk mail, (8) be concise, (9) use appropriate language, (10) use appropriate emoticons (emotional icons) to help convey meaning, and (11) use appropriate intensifiers to help convey meaning [do not use ALL CAPS or multiple

exclamation marks (!!!!)].

## 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 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 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.

## Anticipated Class Schedule/Calendar

\*\*\*Tentative, subject to change without prior notice\*\*\*

Chemistry 100 Tue/Thur 8-11:10AM 2715 Spring 2022				
Week	Day	Lecture	Addon	lab
1	15-Feb	Chapters 1: chemistry.ppt	(1) Ice-breaker, (2) 1 <sup>st</sup> day what is chem.pdf	Intro, locker, groups
2	23-Feb	Chapters 2 Measurments.ppt	W02 Numbers Chem 100.pdf	Lab 1: Measurements
3	1-Mar	Ch. 3: Atoms.ppt	[Post lecture] W03 Scientific Method.pdf, W03 Using PhET Hydrogen Atom Chem 100 & Ch 02 Atoms.pdf	Exam 1
4	8-Mar	Ch. 4: Reactions.ppt	[Post lecture] Ch 04 chemical reactions.pdf	Lab 3: Determining a formula
5	15-Mar	Ch. 5: Stoichiometry.ppt	[Post lecture] Ch 05 Stoichiometry.pdf	Lab 4: Nomenclature
6	22-Mar	Ch. 6: Gases.ppt	[Post lecture] Ch 06 Gases.pdf	Exam 2
7	29-Mar	Ch. 7: Energy.ppt	[Post lecture] Ch 07 Energy.pdf	Lab 2: Heat of Fusion & Vapor
8	5-Apr	Ch. 8: Atomic theory.ppt	[Post lecture] Ch 08 Atomic Theory.pdf	Lab 6: VSEPR
9	12-Apr	Ch. 9: Chemical bonds.ppt	[Post lecture] Ch 09 Chemical Bonds.pdf	Exam 3
Spring Break 18-23 April				
10	26-Apr	Ch. 10: Solids and liquids.ppt	[Post lecture] Ch 10 Solids.pdf	Lab 5: NIE
11	3-May	Ch. 11: Solutions.ppt	[Post lecture] Ch 11 Solutions.pdf	Lab 5 continued
12	10-May	Ch. 12. Acids and Bases.ppt	[lecture] Ch 12 Acid Base chemistry.pdf	Exam 4
13	17-May	Ch 13. Equilibrium.ppt	[lecture] W13 chem 100 Building Block Equilibrium worksheet.pdf	Lab 7: Titration
14	24-May	Ch 14. Redox		Exam 5
15	31-May	Holiday		Lab Exam & locker checkout
16	7-Jun	Review for final		Final