

Basic Course Information

Semester:	Winter 2019	Instructor Name:	Dr. Omar Alshykhly
Course Title & #:	Chemistry 100 Introduction to Chemistry	Email:	Omar.alshykhly@imperial.edu
CRN #:	15039	Webpage (optional):	
Classroom:	2715	Office #:	410
Class Dates:	01/02/19 to 02/01/19	Office Hours:	N/A
Class Days:	MTWRF	Office Phone #:	6298
Class Times:	Lec. 12:30 pm – 02:45 pm, Lab. 03:00 pm – 05:15 pm	Emergency Contact:	Department Secretary (760) 355-6155
Units:	4.0		

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 200. (CSU)(UC credit limited. See a counselor.) Prerequisite: MATH 091 or MATH 090 with a grade of "C" or better.

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.

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. identify the type of intermolecular forces existing between molecules, and its effect on macroscopic property of the substance.
10. calculate solution concentration of various types including dilutions.
11. define the three basic concepts (Arrhenius, Bronsted-Lowry and Lewis) of acids and bases and perform titration experiments and calculate pH.
12. use Le Chatelier's Principle to predict the shift in the direction of the reactants/products
13. determine the oxidant/reductant and balance redox equations.
14. describe nuclear processes and write nuclear equations using the subatomic particles involved and identify health factors and risks involved.

Textbooks & Other Resources or Links

1. *Introductory Chemistry – David W. Ball, 1st ed, 2011 eISBN: 978-1-4533-2765-4*

<https://open.bccampus.ca/find-open-textbooks/?uuid=2b7740b5-88cb-4e78-8f93-9f582afa605a>

2. Chemistry 100 Laboratory Manual available at **IVC Chemistry/STEM Club** (\$15)
3. Safety goggles (\$5 - \$10; needed on second class day), close-toed shoes
4. Non-programmable scientific calculator (\$15 - \$25), Bring the calculator to all lecture and lab meetings.
5. Registration with www.saplinglearning.com for online HW (\$40) – requires credit card
6. free access to Net Tutor (online tutoring with a live person) via Canvas

Course Requirements and Instructional Methods

1. Homework Homework is due at the beginning of the class meeting following the day we finish discussing the chapter in lecture. The goal is to give you sufficient practice to enable you to be successful on the examinations. Homework problems are found online at

<http://www.saplinglearning.com/ibiscms/>

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.

Also, there's online tutoring with a live person in **Net Tutor** (embedded inside Blackboard or Canvas).

2. Class-work: Beside the homework problems, there will be some challenging problems giving by the instructor and you will work on them with a group of students during the class time (usually the last 10 -15 mins from the lecture or lab time).

3. There are **5 midterm exams** beside the **final exam (Comprehensive exam)**. Your lowest test grade from the midterm exams will be dropped. If you are absent for a test, then the missed test will be test dropped.

4. Each student is REQUIRED to **buy the Chem 100 Lab Manual** and to **sign up for online HW no later than the second day of class**.

5. For each lab experiment, read the relevant experiment and answer any Pre-Lab Questions before coming to lab. **Pre-Lab Questions sheet should be submitted at the beginning of the lab**. Before leaving the Lab, make sure the **instructor has signed** your Lab Data Sheet. Data should be recorded in **ink**. **Data Sheets and Post-Lab Questions are to be submitted next time Lab meeting**.

Safety rules: At all times, of ANY experimentation, ALL students must wear safety goggles and enclosed shoes. Some others safety rules will be discussed during the first lab meeting.

6. **Lab cleanup** are necessary before the end of each lab. Make sure sink and work area is clean. Points will be deducted to the entire class if the common work areas (fume hood, analytical balances) are dirty.

7. **Presentation Project:** A group of 4 or 5 students have to prepare PowerPoint slides project for an interesting chemistry subject or research area at the end of the semester and they will present it to the class and discuss it. (this will be discussed in more details during the semester).

8. There are **no make-up lab classes**. There are **no make-up midterm exam** unless the absence is attributed to representation of official college functions or an emergency (It is the student's responsibility to show proof of such function). **No make-up for lecture and lab final exam**.

9. **Late** homework, lab reports, projects, etc will not be accepted.

10. There are **no bonus** work available. Kindly seek assistance immediately to clarify any questions.

11. It is **the student's responsibility** to obtain missed assignments before the next class meeting. The missed material can best be obtained from a member of your study group or you can email me. All class note slides (not the discussion) will be posted in the **canvas**, so you can review them if you miss the class.

12. 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.

Course Grading Based on Course Objectives

Homework	15%
Class-work	5%
Midterm exams	40%
Lab Report	15%
Lab Final exam	5%
Presentation project	5%
Lecture final exam	15%

Total	100%
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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 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.

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.

Anticipated Class Schedule/Calendar

Week	Day	Date	Lecture	Laboratory
1	T	1-1	No Classes	No classes
	W	1-2	Ch 1 & Ch 2: Chemical World; Measurement	Syllabus, Safety, Check in,

Imperial Valley College Course Syllabus – Chemistry 100 (Introduction to Chemistry)

Week	Day	Date	Lecture	Laboratory
	R	1-3	Ch 2 Measurement, class-work 1, & 2	Lab 1: Mass of a Penny
	F	1-4	Ch 3: Atoms, molecules, & ions, class-work 3	Ch 3 and Ch 4
2	M	1-7	Ch 4: Chemical reaction and equations, Class-work 4	Lab (Nomenclature)/Handout
	T	1-8	Ch 5 Stiochemistry and the mole, class-work 5	Lecture Exam 1
	W	1-9	Ch 5 Stiochemistry and the mole, class-work 5	Lab 2 Separation of a mixture
	R	1-10	Ch6: Gases, class-work 6	Lab 5 Determining the percent of water in a hydrated metal salt
	F	1-11	Ch 7: Energy and chemistry, class-work 7	Lab 4: Using solubility rules and net ionic equation
3	M	1-14	Ch 8: electronic structure, class-work 8	Lecture Exam 2
	T	1-15	Ch 8 and Ch 9	Ch 9: chemical bond
	W	1-16	Ch 9: Chemical bond, class-work 9	Lab 7: Determine the calorie contents of different cooking oils
	R	1-17	Ch 10: Solid and Liquid, class-work 10	Lab 6: Predict polarity and Lewis structure
	F	1-18	Ch 11: Solution, Class-work 11	Midterm exam 3
4	M	1-21	No Classes	No Classes
	T	1-22	Ch 11: Solution, Class-work 11	Ch 12: Acids and Bases, class-work 12
	W	1-23	Ch 12: Acids and Bases, class-work 12	Ch 13: Chemical equilibrium, class-work 13
	R	1-24	Ch 14: Oxidation and Reduction, class-work 14	Midterm exam 4
	F	1-25	Ch 14: Oxidation and Reduction, class-work 14	Lab 8 Titration
5	M	1-28	Ch 15: Nuclear chemistry, class-work 15	Midterm exam 5
	T	1-29	Ch 16 Organic chemistry, class-work 16	Presentation project
	W	1-30	Presentation project	Lab 3 Using $\text{Co}(\text{H}_2\text{O})_6\text{Cl}_2$ to determine Le Chatelier's principle in chemical equilibrium
	R	1-31	Final Exam Review	Lab Final Exam Review and Lab check out
	F	2-1	Final Exam	Lab Final Exam

Tentative, subject to change without prior notice

Important dates:

Mon. Jan 21st MLK Holiday, no classes.