Basic Course Information

Semester:	**Spring 2017**	Instructor Name:	**Dr. Behrang Madani**
Course Title & #:	**Chemistry 100** **Introduction to Chemistry**	Email:	**beh_madani@hotmail.com**
CRN #:	**20962**	Webpage (optional):	**http://spaces.imperial.edu/behrang.madani/**
Classroom:	**2734 Lecture** **2715 Lab**	Office #:	**2773**
Class Dates:	**Feb 13 to Jun 9**	Office Hours:	**MW: 12:00-1:00 pm** **TuTh: 1:00-2:00 pm**
Class Days:	**Th (Lec); W (Lab)**	Office Phone #:	**(760) 355-6477**
Class Times: Units:	**2:00-5:10 pm (Lec)** **2:00-5:10 pm (Lab)** **4**	Office contact if student will be out or emergency	**Department Secretary** **(760) 355-6155**

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. Analyze chemical reactions and chemical problems through stoichiometry. (ILO2)
2. Predict properties of matter using atomic theory. (ILO2)
3. Use the periodic table properly to determine trends in elements (atomic size, number of valence electrons, metallic character, electronegativity, etc.). (ILO2, ILO4)
4. Perform chemical experiments in a safe, accurate, and scientific manner, using proper glasswares, graphs, and spreadsheets. (ILO2, 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. 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 Required Material

1. *Introductory Chemistry*, by Nivaldo J. Tro (5th ed. Prentice-Hall Publishing, 2015, **ISBN13:** 1269713876)
2. Chemistry 100 Laboratory Manual available at **IVC STEM/CHEM Club** ($15)
3. Safety goggles ($5 - $10; needed on second class day). The goggles must completely enclose the area around the eyes.
4. 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.**
5. Seven (7) Scantron Sheets Form No. 882-E for exams and final.
6. Close-toed shoes for labs
7. Registration with www.saplinglearning.com for online HW ($40) – requires credit card
8. iClicker Remote (you do not need to buy)

Course Requirements and Instructional Methods

1. You have 7 exams including the final exam (see your course schedule). Some practice exams will be made available before each exam.

2. There are no make-up exams or lab classes.

3. Your lowest test grade, excluding the final test grade, will be dropped. If you are absent for a test, then the missed test will be test dropped.

4. 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

www.saplinglearning.com

No 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.

5. Late homework, lab reports, projects, etc will not be accepted and you will have earned zero for that work.

6. iClicker remotes must be purchased or reused from a previous class. 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.

Course Grading Based on Course Objectives

Homework & problem sets	15%
Laboratory experiments and Lab exam	23% + 5%
iClicker Questions	12%
Exams	30%
Final exam	15%

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.

Laboratory safety rules and grading

1) Lab reports will have a value of 25 points and each will be graded. Group 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.

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) 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.

Classroom Etiquette

- Electronic Devices: Cell phones and electronic devices must be turned off and put away during class, unless otherwise directed by the instructor.
- Arriving late is disruptive for other students and will count as ½ hour absent for lecture and 1 hour absent for lab. This means every 3 lecture or 3 lab late equals 1 absence.
- Add/Drop: it is the responsibility of the student to take the necessary steps to add and/or drop the class by the university deadlines.
- 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.
- 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.
- 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.

Academic Honesty

- 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.

- **Blackboard Support center:** The Blackboard Support Site provides a variety of support channels available to students 24 hours per day. http://bbcrm.edusupportcenter.com/ics/support/default.asp?deptID=8543
- **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 Learning Services (library).
- **Library Services:** There is more to our library than just books. You have access to tutors in the learning 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 and El Centro Regional Center provide basic health services for students, such as first aid and care for minor illnesses. Contact the IVC Student Health Center at 760-355-6310 in Room 2109 for more information.
- **Mental Health Counseling Services**. Short-term individual, couples, family, and group therapy are provided to currently enrolled students. Contact the IVC Mental Health Counseling Services at 760-355-6196 in Room 2109 for more information.

Student Rights and Responsibilities

Students have the right to experience a positive learning environment and due process. For further information regarding student rights and responsibilities please refer to the IVC General Catalog available online at http://www.imperial.edu/index.php?option=com_docman&task=doc_download&gid=4516&Itemid=762

Information Literacy

Imperial Valley College is dedicated to help students skillfully discover, evaluate, and use information from all sources. Students can access tutorials at http://www.imperial.edu/courses-and-programs/divisions/arts-and-letters/library-department/info-lit-tutorials/

Important Dates

Feb 25	Deadline to drop full-term classes without owing fees and/or be eligible for refund
Feb 26	Census
Apr 17 - 22	Spring Break
May 13	Deadline to drop full-term classes
May 29	Holiday – Memorial Day. No Classes. (Campus Closed)
Jun 5-9	Final (Lecture and Lab)

Anticipated Class Schedule/Calendar

Wk	Date	Lecture	Lab
1	Feb 13- Feb 16	Ch 1 & 2: Chemical World, Measurement	Syllabus, Safety, and Check in
2	Feb 20 – Feb 23	Ch 2: Measurement, Problem Set 1	Lab 1: Mass of a Penney Problem Set 1
3	Feb 27 – Mar 2	Ch 3: Matter and Energy Problem Set 1	Lab 2: Separation of colorful Mixture Problem Set 2
4	Mar 6 – Mar 9	Ch 4: Atoms and Elements	**Lecture Exam 1**
5	Mar 13 – Mar 16	Ch 5: Molecules and Compounds Problem Set 3	Lab 7: Determining the Calorie Content of Different Cooking Oils, Problem Set 3
6	Mar 20 – Mar 23	Ch 6: Chemical Composition Problem Set 4	Lab 5: Determining the percent water in a hydrated metal salt
7	Mar 27 – Mar 30	Ch 7: Chemical Reactions Problem Set 5	**Lecture Exam 2**
8	Apr 3 – Apr 6	Ch 8: Quantities in Chemical Reactions Problem set 6	Lab 4: Using Solubility Rules and Net Ionic Equation
9	Apr 10 – Apr 13	Ch 9: Electrons in Atoms and the Periodic Table Problem Set 7	Lab 3: Using $Co(H_2O)_6Cl_2$ to Demonstrate Le Chatelier's Principle in Chemical Equilibrium
10	Apr 17 – Apr 20	Spring Break - No Class	
11	Apr 24 – Apr 27	Ch 10: Chemical Bonding Problem Set 8	**Lecture Exam 3**
12	May 1 – May 4	Ch 11: Gases Problem Set 9	Ch 12: Liquid, Solids, and Intermolecular Forces
13	May 8 – May 11	Ch 13: Solutions Problem Set 10	Lab 6: Predicting Molecular Polarity and Lewis Structure
14	May 15 – May 18	Ch 14: Acids and Bases Problem Set 11	**Lecture Exam 4**
15	May 22 – May 25	Ch 15: Chemical Equilibrium Problem Set 12	Lab 8: Titration of Vinegar
16	May 29 – Jun 1	Ch 16: Redox Reactions Problem Set 13	**Lecture Exam 5**
17	Jun 5 – Jun 8	**Final Exam** (Thr.; During Lecture Hrs)	**Lab Final Exam** and Check out

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.