Basic Course Information

Semester	**Spring 2014**	Instructor Name	**Dr. Alto Benedicto**
Course Title & #	**Chemistry 100** **Introduction to Chemistry**	Email	**alto.benedicto@imperial.edu**
CRN #	**20236**		
Room	**2734 (Lec); 2715 (Lab)**	Office	**2779**
Class Dates	**Jan 14 to May 16, 2014**	Office Hours	**TTh 4:30-5:30 pm** **MTWTh 9:40 – 10:10 pm**
Class Days	**Tues & Thurs (Lec)** **Mon (Lab)**	Office Phone #	**(760) 355-5751**
Class Times Units	**3:05-4:30 pm (Lec)** **6:30-9:40 pm (Lab)** **4**	Office contact if student will be out or emergency	**Department Secretary at (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. calculate English and metric unit conversions and measurements using dimensional analysis. (ISLO4)
2. write symbols for elements and know common ionic charges. (ISLO2)
3. derive and write formulas and names for chemical compounds. (ISLO2)
4. write and balance common chemical equations and identify reaction types. (ISLO4)

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, Bronsted-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.

Required Textbooks & Other Resources or Links

1. *Introductory Chemistry*, by Nivaldo J. Tro (4th ed. Prentice-Hall Publishing, 2011, **ISBN13:** 978-0321687937)
2. Chemistry 100 Laboratory Manual available at **IVC Chemistry/STEM Club** ($12)
3. Eight (8) Scantron Sheets Form No. 889-E (submitted ahead of time) and pencil
4. safety goggles ($5 - $10), non-programmable scientific calculator ($15 - $25), closed-toe shoes
5. registration with www.saplinglearning.com for online HW ($29.99)

Course Requirements and Instructional Methods

1. There are **no make-up Exams or Lab Classes**. A score of **zero (0)** will be recorded unless the absence is attributed to representation of official college functions. It is the student's responsibility to show proof of such function **prior** to the date of the absence.
2. **Online HWs are due every Friday at 11:59 p.m.**
3. Each student is REQUIRED to **buy the Chem 100 Lab Manual** and to **sign up for online HW**.
4. Prior to start of Lab Class, read the relevant experiment and answer any Pre-Lab Questions. **Pre-Lab Questions sheet should be torn from the Lab Manual and submitted to the Instructor within two (2) minutes from start of Lab Class to gain full points**. So tear out the relevant Pre-Lab sheets before coming to class, and don't be late!!!
5. Lab clean-ups are done 15 minutes before the end of lab. A **wet towel** should be used to wipe the lab bench in order to gain full points.
6. Before leaving the Lab Class, make sure the **instructor has signed** your Lab Data Sheet. Data should be recorded in **ink**. Cross-out mistakes with a single strike-through line.
7. The first hour of the Lab Class will be devoted to HW. Personal laptop is highly encouraged for online HW during Lab Class.
8. Attendance and remaining during the entire class period is mandatory for Chem 100 Lecture and Lab Classes. If you are sent out during class (e.g., failure to obey safety rules such as wearing Safety Goggles, etc.), you will be marked absent for that Lab, and will garner zero points for the experiment.
9. There are no bonus work available. Kindly seek assistance immediately to clarify any questions.

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. **A four (4) unit class needs a minimum of eight (8) hours of out-of-class time per week**.

Course Grading Based on Course Objectives

Points Distribution		**Points**	**Grading Scale**
Lecture Exams	**6 @ 50**	**= 300 pts**	**85.00% to 100% is A**
Lecture Final Exam	**1 @ 150**	**= 150 pts**	**75.00 to 84.99% is B**
Online Homework	**17 @ 20**	**= 340 pts**	**60.00% to 74.99% is C**
Lab Experiment	**8 @ 20**	**= 160 pts**	**50.00% to 59.99% is D**
Lab Exam and Participation		**= 50 pts**	
TOTAL POINTS		**= 1,000 pts**	

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.
- Student must **sign in during Lecture classes and remain the entire Lecture period** in order to be counted as present in the class.
- **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 absolutely prohibited in Lab classrooms. If you must drink, inform the instructor and then step out of the room.
- 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 to take and present 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 correctly 'cite a source', 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, or assisting others in using materials, which are prohibited or inappropriate in the context of the academic assignment in question.

  Anyone caught cheating or 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 School 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) use of a commercial term paper service

Additional Help – Discretionary Section and Language

- Blackboard support center: http://bbcrm.edusupportcenter.com/ics/support/default.asp?deptID=8543

- Learning Labs: There are several 'labs' on campus to assist you through the use of computers, tutors, or a combination. Please consult your college map for the Math Lab, Reading & Writing Lab, and Learning Services (library). Please speak to the instructor about labs unique to your specific program
- 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.
- Sapling Online HW: For problems involving Sapling website and online HW, email support@saplinglearning.com for faster help.

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 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. We now also have a fulltime mental health counselor. For information see http://www.imperial.edu/students/student-health-center/. The IVC Student Health Center is located in the Health Science building in Room 2109, telephone 760-355-6310.

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/

Anticipated Class Schedule / Calendar

Detailed Activities may be found in Blackboard under "Handout" in Blackboard

WK	DATE	LECTURE	LABORATORY
1	Jan 21 – 23 (20 no class)	Ch 1 & Ch 2: Chemical World; Measurement	Safety and Locker Check-in **HW Sapling Practice & Math Rev**
2	Jan 27 – Jan 30	Ch 3: Matter and Energy	Lab 1: Mass of a Penny **HW 1&2 due**
3	Feb 3 – Feb 6	Ch 4: Atoms and Elements	Lab 2: Separation of a Colorful Mixture **HW 3 due**
4	Feb 10 – Feb 13	Ch 5: Molecules and Compounds	**Lecture Exam 1** (covers Ch 1, 2, 3)
5	Feb 17 – 20 (17 no class)	Ch 6: Chemical Composition	Lab 3: Chemical Equil of a Cobalt Salt **HW 4 & 5 due**
6	Feb 24 – Feb 27	Ch 7: Chemical Reactions	**Lecture Exam 2** (covers Ch 4, 5)

7	Mar 3 – Mar 6	Ch 8: Quantities in Chemical Reactions	Lab 4: Precipitation with Net Ionic Equations **HW 6 & 7 due**
8	Mar 10 – Mar 13	Ch 9: Electrons in Atoms and the Periodic Table	**Lecture Exam 3** (covers Ch 6, 7)
9	Mar 17 – Mar 20	Ch 10: Chemical Bonding	Lab 5: Determining the Formula of a Compound **HW 8 due**
10	Mar 24 – Mar 27	Ch 11: Gases	Lab 6: Lewis Structure and Molecular Shapes **HW 9 & 10 due**
11	Mar 31 – Apr 3	Ch 12: Liquids, Solids, and Intermolecular Forces	**Lecture Exam 4** (covers Ch 8, 9, 10)
12	Apr 7 – Apr 10	Ch 13: Solutions	Lab 7: Calorie Content of Vegetable Oil **HW 11 & 12 due**
13	Apr 14 – Apr 17	Ch 14: Acids and Bases	**Lecture Exam 5** (covers Ch 11, 12, 13)
14	Apr 21 – Apr 24	*HOLIDAY (Spring Break)*	*HOLIDAY (Spring Break)*
15	Apr 28 – May 1	Ch 15 & 16: Chemical Equilibrium and Redox Reaction	Lab 8: Titration of an Acid **HW 13 & 14 due**
16	May 5 – May 8	Ch 17: Radioactivity and Nuclear Chemistry	**Lecture Exam 6** (covers Ch 14, 15, 16)
17	May 12 – May 15	**HW 15,16,17 (due Tue 11:59 pm);** **FINAL EXAM (Thu)**	**Lab Exam** and Locker Checkout