Basic Course Information

Semester	**Summer 2015**	Instructor Name	**Dr. James Fisher**
Course Title & #	**Chemistry 200 General Inorganic Chemistry I**	Email	**jim.fisher@imperial.edu**
CRN #	**30121**	Webpage	**http://faculty.imperial.edu/jim.fisher**
Room	**2716**	Office	**2771**
Class Dates	**24-Jun-15 to 30-Jul-15**	Office Hours	**N/A summer**
Class Days	**Wk 1: W-F, Wk 2-5: M-T**	Office Phone #	**(760) 355 6524 (ext-6524)**
Class Times Units	**10AM-5:10PM** **5**	Office contact if student will be out or emergency	**Department Secretary 760-355-6155**

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) (CSU, UC)

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. Perform dimensional analysis calculations as they relate to problems involving percent composition and density. (ISLO2)
2. Write chemical formulas, and name inorganic compounds. (ISLO2)
3. Relate chemical equations and stoichiometry as they apply to the mole concept. (ISLO2)
4. Identify the basic types of chemical reactions including precipitation, neutralization, and oxidation-reduction. (ISLO4)
5. Knowledge of atomic structure and quantum mechanics and apply these concepts to the study of periodic properties of the elements. (ISLO4)

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. Student will investigate the phenomenon of vapor pressure.
12. Student will demonstrate knowledge of computer-assisted methods of data acquisition, analysis and presentation.

Textbooks & Other Required Material

1. Textbook: *Chemical Principles*: *The Quest for Insight*. Peter Atkins, Loretta Jones. *6th ed.* W. H. Freeman (2012)
2. Lab Manuals: General Chemistry on the Laboratory; Postma et al, 7th ed. 2009
3. Supplemental Lab Manual: Chemistry 200 Laboratory Packet; is purchased from the STEM/Chem club
4. 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
5. Non programmable calculator: a highly recommended calculator is the Texas Instruments TI36X Solar Scientific Calculator (not the "Pro") or the TI-30Xa.
6. Scranton for your final exam an 882-E, for 100 answers.

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***), 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, only 5 exams are given, and no exams are dropped.
- **Safety** in the laboratory is of utmost importance - those who do not follow the outlined safety procedures will have points deducted from their lab score or asked to leave the lab during that lab. Closed toed shoes and goggle are required.
- **Laboratory**: 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 the 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 days 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.

- **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 (2 in Summer and Winter) 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.
- **Lab Cleanup** 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. The class can lose up to 10 points.
- **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 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.

Good students plan are aware of their strengths and weaknesses

- **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.
- **Falling behind will be disastrous.**
- **Don't try to cram! It doesn't work.**
- **Sometimes it helps to form a study group.**
- **Keep up!!**
- **No Gifts, cards, or food. All will be refused. Spend your time and effort studying.**

Course Grading Based on Course Objectives

Exams	5 @ 100	500 pts
Lab Exams	3@ 100	300 pts (200 pts Summer/Winter)
Lab Cleanup	14@-10	("-" points lost if necessary)
Labs	14 @ 10	140 pts
Final Exam		240 pts
TOTAL (about)		≈1250 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 absences exceed the number of hours the class is scheduled to meet per week may be dropped.
- **Lecture Attendance** is recorded. Students are expected to attend every class session. Any student who misses the first class will be dropped. Students may be dropped at instructor discretion if they miss more than a week of class hours continuously (3 hours).
- **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 not lab makeups. Y**ou 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 notebook 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, and you will NOT receive credit for the lab. Locker checkout counts as 2 labs or 20 points.**
- Absences attributed to the representation of the college at officially approved events (conferences, contests, and field trips) will be counted as 'excused' absences.

Classroom Etiquette

- **Removal of students,** by the Instructor, for "good cause" either temporary or permanent is found in California Education Code Section 76030-76307. Definition of Good Cause including but not limited to: Continued disrupted behavior, continued willful disobedience…open and persistent defiance of the authority...
- 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.
- 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.
- 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.
- 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; (g) using unauthorized material i.e. notes.

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.

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

WK	DATE	LECTURE	LABORATORY
1			
	6-24	Fundamentals A & B	Intro, Safety, Lockers
	6-25	Fundamentals B & C	M-1 Measurements
	6-26	Fundamentals D	Lecture Exam 1
2	6-29	Fundamentals E	M-A Nomenclature
	6-30	Fundamentals F	IVC 5 Formula of a Hydrate
	7-1	Fundamentals G	M-7 Chemistry of Oxygen
	7-2	Fundamentals H	Lecture Exam 2
3	7-6	Fundamentals I	M-18 Net Ionic Equations
	7-7	Fundamentals J	M-34 Reduction Oxidation day 1 & 2
	7-8	Fundamentals K	Lab Exam 1
	7-9	Fundamentals L	Lecture Exam 3
4	7-13	Fundamentals M	IVC 4 Titration day 1 & 2
	7-14	Chapter 1	IVC 4 Titration day 2 & 3
	7-15	Chapter 2	M-14 Heat Capacities of Metals
	7-16	Chapter 3	Lecture Exam 4
5	7-20	Chapter 4	M-B Lewis structures
	7-21	Chapter 5	M-23 Equilibrium dry lab only
	7-22	Chapter 8	IVC 10
	7-23	Chapter 11	Lecture Exam 5
6	7-27	Chapter 12	IVC 8 Buffers
	7-28	Chapter 13	Lab Exam 2
	7-29	Final Prep.	Locker checkout
	7-30		Final