

Basic Course Information

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| Semester | Winter 2015 | Instructor Name | Dr. James Fisher |
| Course Title & # | Chemistry 100 General Chemistry | Email | jim.fisher@imperial.edu |
| CRN # | 15014 | Webpage (optional) | http://faculty.imperial.edu/jim.fisher |
| Room | 2716 | Office | 2771 |
| Class Dates | 6-Jan-15 to 6-Feb-15 | Office Hours | N/A in winter |
| Class Days | Mon-Fri | Office Phone # | (760) 355-6524 (ext-6524) |
| Class Times | 10:00 am - 02:40 pm | Office contact if student will be out or emergency | Department Secretary 760-355-6155 |
| Units | 4 | | |

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:

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, 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 Required Material

1. Nivaldo J. Tro, (2015). *Introductory Chemistry Plus MasteringChemistry with eText -- Access Card Package, 5/e*. Prentice Hall, ISBN -1269713876
2. Online Homework Course ID: MCFISHER72965
3. Lab Manuals: Chemistry 100 Laboratory Packet; is purchased from the Chemistry/STEM 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.
7. Additional Required Supplies: Closed toed shoes.

Course Requirements and Instructional Methods

- **Online homework:** Your text book has the code to access the online homework. In winter intersession you are required to complete 100 points out of the 220 possible points. Should you go beyond 100 points, you can earn extra credit up to 150 points or 50 extra credit points.
- **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, 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.
- **Final Exam:** The Final Exam is comprehensive. Final exam questions are in multiple-choice format. You must purchase a 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.
- **Lab Exam:** The lab exam will contain problems and/or explanation type questions based on the preceding 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 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.

- **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. The first time a locker combination is repeated to you or you forget your goggles, each will cost you 5 points. After that you will lose 10 points for either forgetful task.
- **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.
- **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.**
- **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!!!!**

Course Grading Based on Course Objectives

| | | |
|-----------------|---------|-----------|
| Quizzes | 5 @ 10 | 50 pts |
| Online Homework | | 100 pts |
| Exams | 5 @ 100 | 500 pts |
| Labs | 14 @ 10 | 140 pts |
| Lab Attendance | 14@10 | 140 pts |
| Lab Cleanup | 14@10 | 140 pts |
| Lab Exam | | 100 pts |
| Final Exam | | 200 pts |
| TOTAL (about) | | ≈1100 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). Please make arrangements with the instructor or a fellow student to keep up with all assignments in case you cannot attend a class session for any reason.

- **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. **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, 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

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/Lab Schedule / Calendar

| WK | DAY | DATE | LECTURE | LABORATORY |
|----------|--------|------|------------------|--|
| 1 | Mon. | 1-5 | | |
| | Tues. | 1-6 | Chapters 1 | Procedures, Safety, and Equipment Policy |
| | Wed. | 1-7 | Chapters 1 | Lab 1: Calculations |
| | Thurs. | 1-8 | Chapters 1 & 2 | Lab 1: Calculations |
| | Fri. | 1-9 | Chapters 2 & 3 | Exam 1 |
| 2 | Mon. | 1-12 | Chapters 3 & 4 | Lab 2 Heat of Fusion/Vapor |
| | Tues. | 1-13 | Chapter 4 | Lab 3 Nomenclature |
| | Wed. | 1-14 | Chapters 4 & 5 | Lab 3 Nomenclature |
| | Thurs. | 1-15 | Chapter 5 | Lab 4 Empirical Formula |
| | Fri. | 1-16 | Chapters 5 & 6 | Exam 2 |
| 3 | Mon. | 1-19 | Holiday | |
| | Tues. | 1-20 | Chapters 6 & 7 | Lab 5 Net Ionic Equations |
| | Wed. | 1-21 | Chapter 7 & 8 | Lab 6 Molar Volume |
| | Thurs. | 1-22 | Chapters 8 & 9 | Lab 7 Lewis Dot Diagrams |
| | Fri. | 1-23 | Chapter 9 | Exam 3 |
| 4 | Mon. | 1-26 | Chapters 9 & 10 | Lab 7 Lewis Dot Diagrams |
| | Tues. | 1-27 | Chapter 10 | Lab 8 Equilibrium Constant |
| | Wed. | 1-28 | Chapters 10 & 11 | Lab 8 Equilibrium Constant |
| | Thurs. | 1-29 | Chapters 11 & 12 | Lab 9 Titration |
| | Fri. | 1-30 | Chapter 12 | Exam 4 |
| 5 | Mon. | 2-2 | Chapters 13 & 14 | Lab 9 Titration |
| | Tues. | 2-3 | Chapter 14 | Lab Exam |
| | Wed. | 2-4 | Chapters 15 & 16 | Exam 5 |
| | Thurs. | 2-5 | Chapters 17 | Lab Cleanup, equipment and locker checkout |
| | Fri. | 2-6 | | Final |