CHE1951 - Honors Chemistry I - Fall 2019

Lectures: M, W, F 10:00 - 10:50a
Location: 116 SERC

Lecturer: Prof. Daniel Strongin
Office: 246 Beury Hall
Office hours: Tue 1-2p, Th 1-2p
or by appointment
email: daniel.strongin@temple.edu

Recitations: T 4:00 - 4:50p
W 12:00 - 12:50p

Course description:
Chemistry 1951 is designed as an advanced introduction to the fundamental principles of Chemistry. The course will introduce students topics typically taught in an introductory course, but will give a more detailed description of the topics. It is will be assumed that you have successfully taken high school algebra and chemistry. All students must be registered for a recitation section.

Course materials:
• Sapling Homework Access
• Solutions for text (optional) - Solutions Manual.
• Calculator is necessary for problem solving for homework and examinations. Graphic calculators or PDAs are not permitted during examinations.

Course Schedule:
Attached to this syllabus for the course. The outline gives the subject matter that will be presented at each lecture. Additional outline/assignment sheets will be given out as necessary. I will keep you informed if the sequence of material or its presentation date differs significantly from that in the assignment sheet.

Incompletes:
The grade of "I" (i.e., incomplete) will only be given for extraordinary circumstances and under the guidelines set by the University (policy # 02.10.13). The student must have completed the majority of the work at a passing level to be considered for an "I". In the event an "I" is given, there will be a written agreement between the student and me which outlines the work that needs to be completed and the default grade that will be given if the work is not carried out in the stated time-frame. The time-frame for completion cannot be more than a year after the semester in which the “I” was given. The agreement will be retained by the instructor and student, and a copy will be filed (and approved) with the Dean’s office. An “I” cannot be granted after the final
exam is given to the class.

Lectures:
The lectures may not always follow the required textbook's presentation style or sequence in order to offer an alternate way about thinking about a subject. You are, however, responsible for both the lecture and material covered in the textbook. Lectures also will make you aware of areas that will be emphasized on examinations.

Recitations:
There is a recitation period set aside for each student taking this course. Quizzes will also be given in recitation. You will be told when to expect quizzes. Solving problems will be a focus of the recitation. Periodic homework assignments will be given online (you will need Sapling access).

Examinations:
Three exams will be given during the semester. The exams have been scheduled for September 25, October 21, and Nov. 25, 2019. You will be notified well in advance of an exam (at least two weeks) if there are changes to these dates. Please note that in general there will be no make-up examinations. Only documented excuses in extraordinary circumstances will be accepted.

Grading:
The final grade in the course is based on the total number of points accumulated over the semester in homework, midterm exams, and the final exam. The breakdown is as follows:
- 3 midterm exams - 100 pts each (300 pts total)
- final exam – 200 pts
- 5 recitation quizzes (1 throw out) and homework – 200 pts

Academic Honesty is Expected:
Students are expected to adhere to the highest standards of academic honesty. Collaboration and discussion are encouraged, but all work to be graded is to be written in the student’s own words. Cheating of any kind is not tolerated; see the Student Code of Conduct: http://policies.temple.edu/getdoc.asp?policy_no=03.70.12

Student Rights and Responsibilities:
The University has a policy on Student and Faculty Academic Rights and Responsibilities: http://policies.temple.edu/getdoc.asp?policy_no=03.70.02 Temple University is a community of scholars in which freedom of inquiry and expression is valued. Each member of the University community is expected to have respect for the rights of others, to conduct one’s self in a manner that is compatible with the University’s mission, and to take responsibility for one’s actions. To fulfill its functions of promoting and disseminating knowledge, the University has authority and responsibility for maintaining order and for taking appropriate action, including, without limitation, exclusion of those who disrupt the educational process. Please refer to the Student Code of Conduct.

Withdrawal
Per University Policy, during the first two weeks of the fall or spring semester, students may drop a course with no record of the class appearing on the transcript. The deadline this semester is 9/9/2019. In weeks three through nine of the fall or spring semester, the student may withdraw with the advisor’s permission. The course will be recorded on the transcript with the instructor’s notation of “W,” indicating that the student withdrew. After week nine of the fall or spring semester, students may not withdraw from courses.
Students with disabilities:

Any student who has a need for accommodations based on the impact of a documented disability or medical condition should contact Disability Resources and Services (DRS) in 100 Ritter Annex (drs@temple.edu; 215-204-1280) to request accommodations and learn more about the resources available to you. If you have a DRS accommodation letter to share with me, or you would like to discuss your accommodations, please contact me as soon as practical. I will work with you and with DRS to coordinate reasonable accommodations for all students with documented disabilities. All discussions related to your accommodations will be confidential.

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<table>
<thead>
<tr>
<th>The Week Beginning:</th>
<th>Topic</th>
<th>Chapter(s) in Chemical Principles</th>
</tr>
</thead>
<tbody>
<tr>
<td>August 26 MWM</td>
<td>Particle and Wave Interpretation of light, Wave nature of matter, Particle in a Box</td>
<td>Topic 1A, 1B, 1C</td>
</tr>
</tbody>
</table>
| September 2 WF      | Atoms and Atomic Orbitals  
                      Atomic weight, Avogadro’s number | Topic 1D |
| September 9 MWF     | M: Homework Topic 1A-1D Due  
                      MW: Many electron atoms, Periodic Table  
                      F: Ionic Bonding | Topic 1E, 1F |
| September 16 MWF    | M: Homework Topic 1E-1F Due  
                      Covalent Bonding,  
                      Lewis structures, electronegativity, polarizability | Topic 2B-2D |
| September 23 MWF    | M: Homework Topic 2A-2D Due  
                      M: Midterm#1  
                      WF: VSEPR model, Valence Bond Theory | Topic 2E,2F |
| September 30 MWF    | Hybridization, Bonding in Diatomic Molecules | Topic 2G |
| October 7 MWF       | M: Homework Topic 2E-2G Due  
                      The Gas Laws, Kinetic Theory of Gases | Topic 3A-3D |
| October 14 MWF      | M: Homework Topic 3A-3D HW Due  
                      M: More Gas Laws  
                      WF: First Law of Thermodynamics, Heat Capacities, Enthalpy | Topic 3E  
                      Topic 4A-4C |
| October 21 MWF      | M: Midterm#2  
                      WF: Reaction Enthalpy | Topic 4D |
| October 28 MWF      | M: Homework Topic 4A-4C Due  
                      Hess’s Law, Bond Enthalpy | Topic 4E |
| November 4 MWF      | M: Homework Topic 4D-4E Due  
                      Entropy and The Second Law of Thermodynamics | Topic 4F-4H |
| November 11 MWF     | M: Homework Topic 4F-4H Due  
                      Reaction Entropy, Gibbs Free Energy | Topic 4I, 4J |
| November 18 MWF     | M: Homework Topic 4I-4J Due  
                      M: More on Free Energy  
                      WF: Solids and Materials Chemistry | Topic 4J  
                      Topic 3H |
| November 25         | Thanksgiving Break | |
| Dec 2 MWF           | M: Exam #3  
                      Intermolecular forces, liquid structure,  
                      Phase equilibria in One Component Systems | Topic 3F  
                      Topic 5A,5B |
| December 9 M        | M: Topic 3H,3F,5A HW Due  
                      Phase equilibria in One Component Systems (Continued) | Topic 5A,5B |