Instructor: Julien Gendell  233 SEB; 370-2088; e-mail: jgendell@oakland.edu

Office Hours: MWF 10:30-11:30 am (also by appointment)

Text: General Chemistry (8th Edition), Ebbing and Gammon

Catalog Course Description: Integrated lecture-laboratory. States of matter, atomic structure, bonding and molecular structure, chemical reaction. Recommended preparation is three years of high school mathematics and one year of high school chemistry. CHM 157 satisfies the university general education requirement in natural science and technology. Offered fall and winter.

Prerequisites: Score of 20 or higher on ACT mathematics exam; or MTH 012; or CHM 090

Course Objectives: The course satisfies the natural science and technology Knowledge Explorations Area of the general education curriculum. Students will be expected to demonstrate knowledge of major concepts from natural science, including the development and testing of hypotheses; drawing conclusions; the reporting of findings through laboratory experience; and how to evaluate sources of information in the chemical sciences. A capacity for critical thinking is required to successfully master and apply the material in this course.

Course Format: CHM 157 is an integrated lecture-laboratory course involving lectures and discussions MWF 12:00-1:07 pm in 200 DHE, recitations T 12:00-12:55 pm in 203 DHE and laboratory work (Sections 41580, 41581, 41482, 41583, and 45413) in 230 HHS. Note that the recitation sessions are an integral part of the course. They will be used for answering questions about the lectures, the text material and the assigned homework problems.

Learning Objectives: The learning objectives for this course, in the form of a summary of facts and concepts and operational skills, are presented in the text at the end of each chapter.

Class Attendance: Attendance is not mandatory for the lecture or recitation sessions. However, you are responsible for all the material that is presented in the lectures and recitations.

Note: Attendance is mandatory for every laboratory session.

Homework

Homework will be assigned, but not collected and graded. However, success on quizzes and exams is closely related to the completion of all the assigned homework problems.
Tentative Lecture Schedule

8/30-9/25  Chapter 1
          Chapter 2
          Chapter 3

          Introduction to Chemistry; Measurement; Atoms, Ions and Molecules; Atomic Theory; Chemical Substances; Mass, Moles and Chemical Formulas, Stoichiometry

9/29-10/23  Chapter 4
             Chapter 5 (omit Sections 5.7 and 5.8)
             Chapter 6 (omit Sections 6.6, 6.8, and 6.9)

             Chemical Reactions; Aqueous Solutions; Gas Laws; Kinetic-Molecular Theory; Energy, and Heat, Enthalpy

10/27-11/20  Chapter 7,
             Chapter 8,
             Chapter 9
             Chapter 10 (Sections 10.1 thru 10.4)

             Quantum Mechanical Theory; Electron Configurations of Atoms and Ions; Properties of Atoms, Ionic and Covalent Bonding, Lewis Electron-Dot Formulas, Octet Rule, Resonance, Formal Charge, Bond Energy, VSEPR Model, Dipole Moment and Molecular Polarity, Valence Bond Theory

11/27-12-4  Chapter 11 (Sections 11.1, 11.2, 11.5, and 11.6)
             Chapter 12 (Sections 12.1, 12.2, and 12.3)

             Properties of gases, liquids, and solids, phase transitions, intermolecular forces, classification of solids, solutions and solubility
Quiz and Exam Schedule (Scantron form No. 815 required for quizzes)  
(Scantron form No.882 required for exams)

Quiz 1                Wed. 9/13
Exam 1                 Wed. 9/27
Quiz 2                   Wed. 10/11
Exam 2                  Wed. 10/25
Quiz 3                    Wed. 11/8
Exam 3                   Wed. 11/22
Final Exam            Monday 12/11 12:00-2:00 pm

Note: No “make-up” quizzes or exams will be given.

Note: If the university should close due to inclement weather or other emergency on a day when an exam is scheduled, the missed exam will be given during the next class.

Grading

Quizzes            3 x 35 points each = 105 points
Exams            3 x 100 points each = 300 points
Final Exam                = 150 points

Your grade for the lecture part of CHM 157 will be determined by your performance on the 3 quizzes, 3 exams, and the final exam. Your final grade in CHM 157 will be determined as follows: Lecture grade 80%, Laboratory grade 20%.

Note: By the seventh week of the semester, students who are not making satisfactory progress in the lecture part of the course will be notified by the on-line Banner system.
Note: If you are repeating this course, you may be able to waive the laboratory portion of the current course. You may choose to use the laboratory scores from the first course if: (1) your average in the laboratory portion of that course was at least 75% and (2) you were enrolled in that course no more than three years ago. If you wish to apply for a laboratory waiver, you must complete a General Chemistry Laboratory Waiver form. This form must be completed and returned to your current lecture instructor during the first week of the current semester. You must attend the laboratory portion of the course until the waiver is approved.