

Chemistry 1010 -090 (Online)  
Chemistry, Humanity, and Environment

1. **Course Content**

The Online version of Chemistry 1010 (1010-090) supports the aims of the *University of Utah General Education Mission Statement*: The course has been designed for nonmajors and presupposes no background in chemistry. The course begins with a discussion of the manner in which chemists classify materials and forms of energy. This introduction is followed by a historical, qualitative presentation of some of the major theories/models (atomic theory, kinetic theory) on which an understanding of chemistry is based. The models are then applied to learning the characteristics of the atom, the molecule, and the phases of matter. Chemical equations are taught with examples of quantitative problem solving based on balanced equations. A general overview of topics, such as acid/base, oxidation/reduction, organic chemistry, and polymers, completes the discussion of basic chemistry.

In the following portion of the course, the students apply the knowledge of basic chemistry to environmental questions such as energy sources, air quality, water quality, mineral resources, and soil fertility. This section of the course is enriched by brief student papers on environmental topics. The students read and evaluate the papers of their peers. An alternative to the paper is an environmental scrapbook designed to direct the students to articles in newspapers and periodicals which discuss the important environmental issues of the day.

2. **Course Method**

The method of education is multifaceted.

1. For a particular activity, the students are assigned chapters in the text, *Chemistry for Changing Times, 13th Edition* by John W. Hill, Terry McCreary, and Doris Kolb. The student is provided with a study guide which informs him/her of the relative importance of the chapter sections. A question/problem assignment is given with a link to answers and solutions, additional information and/or an alternative method of organization of the material. When the student has completed a topic, he/she takes an online quiz with immediate feedback. The quiz is taken only the first time for a grade but may be used as a study tool as many times as necessary.

2. The student is given explicit directions about preparation of a short research paper on an environmental topic. The papers are graded by the instructor and also posted to permit students to read and evaluate papers of other students. An alternative to the paper is preparation of a scrapbook of 20-30 articles on environmental issues.

3. Evaluation of student learning consists of a midterm and a final exam. The midterm covers the initial studies of the scientific method and basic chemistry. The final exam covers environmental topics with integration of the earlier material. The instructor offers an on-campus review before each of the exams.

3. **Important Dates**

Class begins – Monday, January 12, 2015

Spring break – Sun-Sun. March 15-22, 2015

Last day to Drop (delete) classes – Wednesday, January 21, 2015

Last day to Withdraw from classes – Friday, March 6, 2015

Classes end – Tuesday, April 28, 2015

Midterm exam – To be announced

Final Exam – To be announced