

## Chem 103 Syllabus Fall 2005

### Chem 103: Chemistry in the Modern World

#### Professor Teddy (Tewodros) Asefa

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**Course Description and Prerequisite Skills:** Chemistry 103 (“*Chemistry in the Modern World*”) is a chemistry course intended for non-science students with an interest in chemistry and science. It includes topics such as environmental chemistry and environmental remediation, chemical bonding, energy, nuclear chemistry, organic chemistry, biochemistry, and medicinal chemistry. No prior chemistry instruction is required or assumed. The course may appeal to those who have also had high school chemistry.

**Learning Goals:** Our universe is full of dynamic chemical changes and processes. In our lives and daily activities, we experience a number of these chemical changes in many ways. These chemical processes and changes are important to the functions of our body and many other things we do. This course is intended to provide an introduction to understanding on a deeper level the role of chemistry in our lives and our world. The course will provide a rational understanding and a basis for interpreting and predicting chemical phenomena through examples of chemical behavior in nature. Thus, students are expected to be able to understand the selected chemical processes and to be able to apply this understanding to solve new problems in chemical behavior.

The lecture and textbook are designed to explore chemical ideas on a “need to know” basis in the context of “real-world” problems. Chemical Principles are introduced in order to understand scientific problems and to solve problems in the society.

**Lectures:** The materials covered in lecture will be illustrative rather than exhaustive. *You should read the materials in the text assigned before the lecture.* Supplementary materials will often be presented or provided. The examinations, however, will cover both the assigned text and lecture materials whether or not they are specifically covered in lecture. Plenty of help is available to answer questions and provide assistance with problems.

#### **Lecture times:**

MW 10:35-11:30 AM Room CST 1-019

An **approximate** schedule of class lecture topics and the assigned text is included with this syllabus (please note that it is only an **approximate schedule**).

**Grading and Examinations:** Final grades will be assigned based upon the three hour exams given during the regularly scheduled class (60%), the final examination (20%) and the laboratory grade (20%) as follows:

Three Hourly Examinations	3x20 =	60%
Final Examination		20%
Laboratory		<u>20%</u>
		<u>100%</u>

*There will be No Make-Up Examinations.*

### **Exam Schedule:**

Exam I: Wed., September 21  
Exam II: Wed., October 19  
Exam III: Wed., November 16

Final Exam: Mon., December 12, **7:15 PM - 9:15 pm**

Exams I, II, and III will consist of 20 equally weighted multiple choice questions. The Final Exam consists of 17 equally weighted multiple choice questions and three revision multiple choice questions based on the entire course that is worth 3 points. Since the answer to the multiple choice questions must be selected from the number of possible choices and the response “none of the above” often appears, guessing the response is probably not in your best interest.

Any and all problems involving registration, scheduling, grade reporting or other clerical issues are best handled by seeing the undergraduate chemistry secretary: Carol DeGirolamo in 216 Bowne Hall (443-2851).

**Required Textbooks:** The required textbook for the course is: “Chemistry in Context” by Staniski, Eubanks, Middlecamp, and Pienta (Fifth Edition); published for the American Chemical Society by McGraw Hill. The textbook is available in the bookstore. Additional materials may be photocopied and distributed and/or kept to students by the instructor at the Science and Technology library whenever necessary.

**Laboratory:** *There will be no Make-Up labs.* In order to pass CHE 103, a student must have a passing grade in the laboratory portion of the course. Attendance in the laboratory is mandatory. As stated in the schedule of the course, the laboratory periods are nearly 3 hours in length and, while some experiments will not require the total allotted time for completion, students are expected to arrive promptly at the beginning of the lab period and not leave until the particular experiment is completed. Students that arrive too late to complete the experiments in the allotted time and those that arrive on time but depart before the experiment is completed will receive a zero for the experiment. Arranging a second “event” requiring the student’s presence outside of CHE 103 laboratory during the scheduled lab period is not allowed by the University rules.

The supplemental lab manual must be purchased from the bookstore prior to the first laboratory meeting. Experiments not in the purchased packets (listed below) will be provided by the lab instructors.

**Laboratory Meeting Information:**

Place: Bowne Hall; Room 203

Wednesday: 2:15-5:00 PM

Thursday: 11:00-1:45 PM

Thursday: 2:00-4:45 PM

**Experiments:**

Experiment 1 – Introduction and safety – Week of September 12

Experiment 2 – paper Chromatography – week of September 19

Experiment 3 – Archimedes Revisited – week of September 26

Experiment 4 – Clock Reaction – week of October 3

Experiment 5 – Estimating the Caloric Content of Nuts – week of 10

Experiment 6 – Heat of Reaction – week of October 17

Experiment 7 – Chloride in Water – week of October 24

Experiment 8 – pH – week of October 31

Experiment 9 – Reactions of Acids – week of November 7

Experiment 10 – Redox Reactions – week of November 14