



CHEM 1015

Division: Natural Science and Mathematics

Department: Chemistry

Course: CHEM 1015

Title: Survey Chemistry Laboratory

Catalog Description:

This is a hands-on laboratory experience that accompanies the CHEM 1010 course. It is designed to give students a feel for basic laboratory equipment and measurement. It also provides reinforcement of the concepts covered in the class. The lab also enables students to visualize many concepts and experiments discussed in class.

General Education Requirements: Physical Science

Semesters Offered: Fall, Spring

Credit/Time Requirement: Credit: 1; Lecture: 0; Lab: 2

Clock/Hour Requirements: 0

Offered for Non-Credit: No

Prerequisites: MATH 1011 or equivalent

Corequisites: CHEM 1010

Justification:

This course supplies the hands-on experience necessary to learning basic chemistry and is intended as a necessary supplement to the General Education experience of CHEM 1010. This course is a General Education class in the physical science area and is needed to help combat "chemophobia" in the media and to introduce students to chemicals and chemistry in a relatively non-threatening way.

Student Learning Outcomes:

At the conclusion of this course students should have a basic understanding of the chemistry discipline and the many ways chemicals and chemists affect their life and the world around them. Each student should be better able to make observations and act based on those observations, and to think more lucidly. Other outcomes should include a better understanding of the workings of the physical world, and of the interdependence of man, nature, and evolving technologies. This lab portion of the course will also give the students hands-on experience with qualitative and quantitative problems in areas familiar and not so familiar to their everyday life.

Content:

Chemistry 1020 is a General Education course that introduces the student to the hands-on aspects of the scientific discipline of chemistry. Examples of the types of laboratory experiments included: Laboratory safety Measurement techniques Density measurement Chemical vs. physical change Titration of vinegar Black box experiment Soap making Crime-scene investigation Extraction of caffeine from soft drinks Determination of water hardness Preparation of slime Other labs as time allows.

General Education Outcomes:

7) Apply scientific reasoning to a variety of contexts.

Most of this course is conceptually based rather than computationally based. Students learn to apply the concepts of chemistry to many current issues as listed above. They can evaluate their reasoning through discussions with other members of the class during the lab.

Key Performance Indicators:

Students will be assessed weekly through pre-lab questions and laboratory assignments. Labs: 100% of the final grade
Comprehensive final exam: Counts as two labs

Representative Text and/or Supplies:

Lab manual is written and published in-house.

Optimum Class Size: 16

Maximum Class Size: 23

Signatures:

I hereby submit this course syllabus:

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I hereby find this course consistent with the goals and resources of the Chemistry Department:

Mark Wathen, PhD, Assistant Professor, Chair

I hereby find this course consistent with the goals and resources of the Natural Science and Mathematics Division:

Dan Black, EdD, Associate Professor, Dean

I have discussed the need for library resources related to this class with the person submitting the syllabus:

Lynn Anderson, MLIS, Technical Services Librarian (Main Campus)

Michelle Olsen, MLS, Campus Librarian (Richfield Campus)