CHEM 1015

Division: Natural Science and Mathematics
Department: Chemistry
Course: CHEM 1015
Title: Introductory 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 1010 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 fulfills the Physical Science Lab requirement.

Student Learning Outcomes:

At the conclusion of this course students will have a basic understanding of the chemistry discipline and the many ways chemicals and chemists affect their lives

and the world around them. Each student will be able to make observations and act based on those observations, and to think more lucidly. Other outcomes include a better understanding of the workings of the physical world, and of the interdependence of humans, 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 unfamiliar to their everyday lives.

Content:

Chemistry 1015 is a laboratory class that accompanies chemistry 1010. Laboratory exercises are selected to highlight and demonstrate chemical principles discussed in chemistry 1010. The course will cover topics such as:

basic metric system measurements

electronic and nuclear structure of atoms

nuclear reactions

density

ionic and covalent compounds

acid/base chemistry

oxidation and reduction reactions and processes

simple organic reactions

simple chemical analysis

gas laws

intermolecular forces

General Education Outcomes:

7) Apply scientific reasoning to a variety of contexts.

Students will apply chemical principles discussed in Chem 1010 in selected lab exercises. Students receive feedback on their reasoning during in class discussions and on graded pre-lab exercises and lab data sheets.

Key Performance Indicators:

Students will be assessed weekly through pre-lab questions and laboratory assignments (80%) and an end of semester final (20%). Percentages are approximate.

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:

Dan Black, EdD, Associate Professor

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)