

Fond du Lac Tribal and Community College
COURSE OUTLINE FORM

Updated 11/25/14

Please return this form to the college vice president of academic affairs and the chairperson of the Academic Affairs and Standards Council (AASC)

1. Prepared by: _____

2. Date submitted: _____

3. Date approved: _____ Date revised 03/25/15

4. Department/discipline: Chemistry

5. Department(s) endorsement(s): _____

(Signatures of the person(s) providing the endorsement are required.)

6. Course Title: General Chemistry II

Abbreviated course title (25 characters or less): _____

7. Course Designator: CHEM 8. Course Level: 1011

9. Number of Credits: Lecture 4 Lab 1

10. Control Number (on site) 70/24 Control Number (online) _____

11. Catalog/Course description:

This is an in depth study of the principles of inorganic chemistry with emphasis on modern atomic theory, chemical bonding, molecular geometry, gas laws, solution chemistry, acids and bases, chemical equilibrium, electrochemistry, nuclear chemistry, and an introduction into organic chemistry. (Meets MnTC goal area 3).

12. Course prerequisite(s) or co-requisite(s): Accuplacer scores/ Other courses

Prerequisite(s): A working knowledge of basic algebra is recommended

Co-requisite:

13. **Course Materials** (Recommended course materials and resources. List all that apply, e.g. textbooks, workbooks, study guides, lab manuals, videos, guest lecturers).

Text: "Introductory Chemistry: A Foundation" Zumdahl/Decoste

Lab Manual: "Introductory Chemistry in the Laboratory"

14. **Course Content** (Provide an outline of major topics covered in course)

1. Modern atomic theory
2. Molecular bonding
3. Molecular geometry
4. Gas laws
5. Solution chemistry
6. Acids and bases
7. Chemical equilibrium
8. Electrochemistry
9. Nuclear chemistry
10. Introduction to organic chemistry

15. Learning Goals, Outcomes, and Assessment

At FDLTCC we have 4 Competencies Across the Curriculum (CAC) areas. They are as follows:

- A. Information Literacy (the ability to use print and/or non-print tools effectively for the discovery, acquisition, and evaluation of information)
- B. Ability to Communicate (the ability to listen, read, comprehend, and/or deliver information in a variety of formats.)
- C. Problem Solving (the ability to conceptualize, apply, analyze, synthesize, and/or evaluate information to formulate and solve problems.)
- D. Culture (knowledge of Anishinaabe traditions and culture, knowledge of one's own traditions and culture, knowledge of others' traditions and cultures, culture of work, culture of academic disciplines and/or respect for global diversity.)

Course learning outcomes will fulfill the identified competencies.

Course Learning Outcomes:

Upon completion of this course, students will be able to:

1. Demonstrate knowledge of solution types, the dissolving process, and the relationship between solubility and temperature. (C)
2. Correctly perform calculations involving concentration expressed as mass % and molar concentration, dilution of solutions, and solution stoichiometry. (C)
3. Demonstrate knowledge of reaction energies, reaction rate, equilibrium, and Le Chatelier's principle as applied in chemical reactions. (C)
4. Demonstrate knowledge of the basic principles of acids/bases and apply these concepts to titrations, indicators, and the calculations of pH. (C)
5. Distinguish between organic and inorganic compounds and be able to identify organic functional groups, structures, and properties of organic compounds. (C)
6. Demonstrate knowledge of alkanes, cycloalkanes, and their nomenclature. (C)
7. Define and identify amino acids, proteins, protein structure, and enzymes. (C)

16. **Minnesota Transfer Curriculum (MnTC):** If this course fulfills an MnTC goal area, state the goal area and list the goals and outcomes below:

See www.mntransfer.org

Goal Area(s): 3

Goal 3: Natural Sciences