

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 I

Abbreviated course title (25 characters or less): _____

7. Course Designator: CHEM 8. Course Level: 1010

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 atomic structure, molecular structure, periodic properties, chemical nomenclature, stoichiometry, chemical bonding, the mole concept, and chemical reactions. (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. Measurement and conversions
2. Classical atomic theory
3. Nomenclature (Naming and writing formulas from names)
4. Chemical reactions
5. The mole concept
6. Stoichiometry in chemical reactions
7. Matter
8. Chemical composition
9. Energy
10. Modern atomic theory

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, the student will be able to:

1. Correctly perform unit analysis problems applying significant digits and scientific notation. (C)
2. Demonstrate knowledge of the principles of atomic theory, the nuclear atom, isotopes, atomic mass to a discussion of elements and electron configuration. (B)
3. Demonstrate knowledge of the principles and distinguishing characteristics of ionic and molecular compounds based upon physical properties and electronegativity differences. (C)
4. Correctly write molecular formulas from names of compounds and names of molecular formulas for both ionic and covalently bonded compounds. (B)
5. Balance reactions and identify the mole ratio and correctly solve mole calculations and mass to mass calculations involving reactions. (C)
6. Demonstrate knowledge of how the elements are arranged on the periodic table, predict differences in effective nuclear charge, atomic radius, ionization energy, and electron affinity between elements using periodic trends
7. Identify the principle attributes of the liquid state, solid state, and the gaseous state and the energy associated with phase changes.

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