MINNESOTA WEST COMMUNITY & TECHNICAL COLLEGE
COURSE OUTLINE

Faculty members are required to have the outline submitted to the Academic Affairs Office. The course outline is the form used for approval of new courses by the Academic Affairs and Standards Council.

DEPT. CHEM  COURSE NUMBER: 1100

NUMBER OF CREDITS: 3  Lecture: 2  Lab: 1

Course Title:
Introduction to Chemistry

Catalog Description:
Introduction to Chemistry introduces fundamental theories and applications of chemistry including measurement, atomic theory, bonding theory, nomenclature, chemical quantities, chemical reactions, states of matter, solutions, acids and bases, and nuclear chemistry. This course is for students with no recent background in chemistry and is intended for non-science majors and students preparing for General Inorganic Chemistry I. This course includes a lab. Prerequisite: High school algebra (or) MATH 1107 (or) placement by multiple measures.

FULFILLS MN TRANSFER CURRICULUM AREA(S) (Leave blank if not applicable)
Goal 1: Communication: ___ by meeting the following competencies:
Goal 2: Critical Thinking: ___ by meeting the following competencies:
Goal 3: Natural Sciences: X by meeting the following competencies:
  - Demonstrate understanding of scientific theories.
  - Formulate and test hypotheses by performing laboratory, simulation, or field experiments in at least two of the natural science disciplines. One of these experimental components should develop, in greater depth, students' laboratory experience in the collection of data, its statistical and graphical analysis, and an appreciation of its sources of error and uncertainty.
  - Communicate their experimental findings, analyses, and interpretations both orally and in writing.
  - Evaluate societal issues from a natural science perspective, ask questions about the evidence presented, and make informed judgments about science-related topics and policies.
Goal 4: Mathematics/Logical Reasoning: ___ by meeting the following competencies:
Goal 5: History and the Social and Behavioral Sciences: ___ by meeting the following competencies:
Goal 6: The Humanities and Fine Arts: ___ by meeting the following competencies:
Goal 7: Human Diversity: ___ by meeting the following competencies:
Goal 8: Global Perspective: ___ by meeting the following competencies:
Goal 9: Ethical and Civic Responsibility: ___ by meeting the following competencies:
Prerequisites or Necessary Entry Skills/Knowledge:
High school algebra (or) MATH 1107 (or) placement by multiple measures

Topics to be Covered (General)
- Chemistry and measurements
- Matter and energy
- Atoms and elements
- Electronic structure of atoms and periodic trends
- Ionic and molecular compounds
- Chemical quantities
- Chemical reactions
- Stoichiometry
- Bonding and properties of solids and liquids
- Gases and gas laws
- Solutions
- Reaction rates and chemical equilibrium
- Acids and bases
- Oxidation and reduction
- Nuclear chemistry

Student Learning Outcomes
- Identify and convert between various units of measurement including metric and SI systems.
- Write in the language of chemistry, including chemical formulas, names of elements and compounds, and chemical equations.
- Demonstrate the relationship between moles, molar mass, and particles by using conversion factors to correctly solve chemistry problems associated with the above terms.
- Describe the structure of atoms.
- Describe the structure of compounds and intermolecular forces.
- Balance chemical equations and calculate chemical quantities utilizing stoichiometry.
- Classify chemical reactions, states of matter, and mixtures.
- Define and identify acids and bases.
- Apply gas laws by solving problems.

Is this course part of a transfer pathway: Yes [ ] No [x]

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