Fond du Lac Tribal and Community College
COURSE OUTLINE FORM

03/19/19

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: 3/25/2026 Date revised

4. Department/discipline: Chemistry

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

6. Course Title: Organic Chemistry I
Abbreviated course title for Transcripts (25 characters or less):

7. Course Designator: CHEM 8. Course Level: 2010

9. Number of Credits: Lecture 4 Lab 1

10. Control Number (on site) 24 Control Number (online) 24

11. Catalog/Course description:

Organic Chemistry I topics to be discussed include functional groups, nomenclature, chemical structure, including the 3D analysis of stereoisomers. Various organic reactions and their mechanisms will be explored as well as IR spectroscopy and MS Spectrometry. Laboratory will introduce many fundamental techniques as well as syntheses.

12. Course prerequisite(s) or co-requisite(s): Accuplacer scores/ Other courses
Prerequisite(s): Chem 1011 General Chemistry II
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).

- Organic Chemistry: A Tenth Edition. McMurry, John. Openstax. 2023. – This is a free opensource textbook.
- Scientific Calculator (TI-30X is recommended)
- Composition Notebook

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

1. Functional Groups
2. Nomenclature
3. Stereochemistry
4. Introduction to Organic Synthesis

5. Nucleophilic Substitution
6. Elimination
7. Reaction Mechanisms
8. Reaction of Organohalides
9. Reaction of Alkenes and Alkynes
10. IR Spectroscopy
11. MS Spectrometry

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.)

Provide 4-7 Course Learning Outcomes for the course. These outcomes should be stated in measurable terms and be reflective of the content of the course. Please indicate which CAC areas are covered by each outcome as applicable using the following notation at the end of each outcome: (A, B), (B), etc. As well as the appropriate WINHEC Cultural Standards (if applicable).

Upon completion of this course, the student will be able to:

Learning Outcomes	**Competencies (CAC)**	**Cultural Standards**
Identify many different fundamental functional groups in aromatic compounds and their chemical characteristics	C	1
Understand the different types of stereoisomerism that occurs in organic molecules, such as conformers, enantiomers, diastereomers, and understand their effects.	**C**	1,2
Communicate the identity of different organic molecules effectively using IUPAC Nomenclature.	B	1,2
Predict the products of various reactions involving alkenes, alkynes, and organohalides.	C	1,2

Show the electron flow during the various steps of an organic reaction using curved arrows.	C	1
Utilize the retrosynthetic approach to design a scheme to build larger organic molecules from a series of reactions	C	1
Compare and contrast Sn2, Sn1, E1, E2, and E1cb reaction mechanisms and predict which factors will determine which products will form using mechanistic evidence.	C	1
Utilize IR Spectroscopy and Mass Spectrometry to determine the identity of compounds.	C	1
Effectively record and communicate scientific results in laboratory notebook entries and reports	A, B	2, 4

WINHEC Cultural Standards:

1. **GIKENDAASOWIN –** ***Knowing knowledge:*** To develop human beings who value knowledge, learning, and critical thinking and are able to effectively use the language, knowledge, and skills central to an Ojibwe-Anishinaabe way of knowing.
2. **GWAYAKWAADIZIWIN –** ***Living a balanced way:*** To develop balanced human beings who are reflective, informed learners who understand the interrelatedness of human society and the natural environment, recognize the importance of living in harmony with creation, and are able to apply a systems approach to understanding and deciding on a course of action.
3. **ZOONGIDE'EWIN –** ***Strong hearted:*** To increase the students' capacity to live and walk with a strong heart, humble and open to new ideas and courageous enough to confront the accepted truths of history and society.
4. **AANGWAAMIZIWIN –** ***Diligence and caution:*** To develop students' capacity to proceed carefully, after identifying, discussing, and reflecting on the logical and ethical dimensions of political, social, and personal life.
5. **DEBWEWIN –** ***Honesty and integrity:*** To increase students' capacity to think and act with honesty and integrity as they understand and face the realities of increasingly interdependent nations and people.
6. **ZAAGI' IDIWIN –** ***Loving and Caring:*** To encourage students' acceptance of the diversity within their school, community, and environment by developing healthy, caring relationships built on respect for all.

7. ZHAWENINDIWIN – *Compassion:* To expand students' knowledge of the human condition and human cultures and the importance of compassion especially in relation to behavior, ideas, and values expressed in the works of human imagination and thought.

16. **Minnesota Transfer Curriculum (MnTC):** List which goal area(s) – up to two – this course fulfills.

See www.minnstate.edu

Goal Area(s): 3

Provide the specific learning outcomes as listed on the mntransfer.org website that pertain to this course.

Goal Area 3: Natural Sciences
To improve students' understanding of natural science principles and of the methods of scientific inquiry, i.e., the ways in which scientists investigate natural science phenomena. As a basis for lifelong learning, students need to know the vocabulary of science and to realize that while a set of principles has been developed through the work of previous scientists, ongoing scientific inquiry and new knowledge will bring changes in some of the ways scientists view the world. By studying the problems that engage today's scientists, students learn to appreciate the importance of science in their lives and to understand the value of a scientific perspective. Students should be encouraged to study both the biological and physical sciences

Students will be able to:

- 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.

17. Are there any additional licensing/certification requirements involved?

_____Yes__X___No

Provide the required documentation to show course meets required licensing/certification standards.

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