Faculty is 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.

COURSE NUMBER: BIOT 2201

NUMBER OF CREDITS: 3

COURSE TITLE: Organic and Biological Chemistry

CATALOG DESCRIPTION: Topics include: Organic functional groups- physical and chemical properties, various specific organic molecules and their role in industry and/or the environment, lipids, proteins, enzymes, nucleic acids, protein synthesis and metabolism.

AUDIENCE:

FULFILLS MN TRANSFER CURRICULUM AREA(S) (Leave blank if not applicable)
Area: by meeting the following competencies:
Area: by meeting the following competencies:
Area: by meeting the following competencies:

PREREQUISITES OR NECESSARY ENTRY SKILLS/KNOWLEDGE: chem. 1100 or Chem 1101

LENGTH OF COURSE: one semester

THIS COURSE IS USUALLY OFFERED:
Every other year fall X spring summer undetermined

Four goals are emphasized in course at Minnesota West Community & Technical College:

1) ACADEMIC CONTENT: The academic objectives of this course are:
   a. Organic compounds
      i. Alkanes
      ii. Alkenes
      iii. Alkynes
      iv. Alcohols
      v. Ethers
      vi. Ketones and Aldehydes
      vii. Carboxylic acids and esters
      viii. Amines and amides
   b. Biological compounds
      i. Carbohydrates
2) THINKING SKILLS: This course will help students improve the effectiveness of their thinking skills through:
   a. Visualizing chemical geometry and reactions
   b. Identifying functional group and naming compounds from the structural or skeleton structures.
   c. Being able to draw molecules from the chemical name
   d. Understanding why the different functional groups have different chemical properties
   e. By identifying various organic functional groups in the macromolecules of carbohydrates, lipids, proteins and nucleic acids
   f. Understand the roles and of enzymes in metabolism

3) COMMUNICATIONS SKILLS: This course will help students improve their oral and written communication skills through:
   a. Working with each in a laboratory setting
   b. Conversing with the instructor as to their knowledge of chemistry

HUMAN DIVERSITY: This course will help students recognize, understand, and appreciate human diversity through:

TOPICS TO BE COVERED:
   c. Organic compounds
      i. Alkanes
      ii. Alkenes
      iii. Alkynes
      iv. Alcohols
      v. Ethers
      vi. Ketones and Aldehydes
      vii. Carboxylic acids and esters
      viii. Amines and amides
   d. Biological compounds
      i. Carbohydrates
      ii. Lipids
      iii. Proteins
      iv. Enzymes
      v. Metabolism
   e. Class includes laboratory experience of various reactions processes

LIST OF EXPECTED COURSE OUTCOMES:
See topics to be covered.

LEARNING/TEACHING TECHNIQUES used in the course are:
X Collaborative Learning   X  Problem Solving
X Student Presentations   X  Interactive Lectures
Creative Projects   Individual Coaching
Lecture   X Films/Videos/Slides
Demonstrations   Other (describe below)
X Lab

ASSIGNMENTS AND ASSESSMENTS FOR THIS CLASS INCLUDE:
X    Reading    X  Tests         Individual Projects
X    Oral Presentations  X  Worksheets        Collaborative Projects
X    Textbook Problems  X  Papers         Portfolio
X   Group Problems     Term Paper
X Other (describe below)

EXPECTED STUDENT LEARNING OUTCOMES:
  Gain a great understanding of organic and biological chemistry.
  To obtain knowledge of the physical and chemical properties of various chemical.

Veteran Services: Minnesota West is dedicated to assisting veterans and eligible family members in achieving their educational goals efficiently. Active duty and reserve/guard military members should advise their instructor of all regularly scheduled military appointments and duties that conflict with scheduled course requirements. Instructors will make every effort to work with the student to identify adjusted timelines. If you are a veteran, please contact the Minnesota West Veterans Service Office.

To receive reasonable accommodations for a documented disability, please contact the campus Student Services Advisor or campus Disability Coordinator as arrangements must be made in advance. In addition, students are encouraged to notify their instructor.

This document is available in alternative formats to individuals with disabilities by contacting the Student Services Advisor or by calling 800-658-2330 or Minnesota Relay Service at 800-627-3529 or by using your preferred relay service.

A Member of the Minnesota State Colleges and Universities System
An Affirmative Action Equal Opportunity Educator/Employer