DAKOTA COLLEGE AT BOTTINEAU

COURSE SYLLABUS

## Course Prefix/Number/Title: **Spring**

**Course Prefix/Number/Title:** Chem 116, Introductory Organic and Biochemistry

## Number of credits: 4

## Course Description: This course is an introduction to organic and biochemistry. It includes topics on functional groups, nomenclature, organic reactions, proteins, enzymatic action, carbohydrates, lipids, nucleic acids, and metabolism. This course meets requirements for wildlife, nursing, dental hygiene, and other health career majors.

## Pre-/Co-requisites: Chem 115 or Chem 121

## Course Objectives:

By the end of this course, you should be able to: (1) Identify the major organic functional groups. (2) Name simple organic compounds using IUPAC rules. (3) Be familiar with the biological groups of compounds that include carbohydrates, lipids, proteins, and nucleic acids. (5) Understand how each biological group provides energy and/or building materials to the body. (6) Understand the role of enzymes in chemical reactions in living organisms. Travel may be necessary to experience the role of chemistry in their everyday life.

## Learning Objectives: To develop a fundamental understanding of the basic principles of organic and biochemistry**.**

## Instructor: Angela Bartholomay

## Office: NSC 111

## Office Hours: 9:00-9:50am MWF, 1:00-1:50 TTh

## Phone: (701)-228-5471

## Email: angela.bartholomay@dakotacollege.edu (preferred)

## Lecture Schedule: MWF 11-11:50am

## Lab Schedule: TBD

## Lab Manual: Blackboard shell

## Textbook(s): Organic and Biochemistry by Blei and Odian. W.H.Freeman, Publisher

| Lecture Schedule | Topics & Reading Assignments | Lab Schedule | Topic |
|---|---|---|---|
| Week 1 | Intro to organic chemistry Chapter #3 | | no lab |
| Week 2 | Chapter #3-4 hydrocarbons | | Molecular Models |
| Week 3 | Chapter #4 **Exam #1 Chapter # 3-4** | | ID of Hydrocarbons |
| Week 4 | Chapter #5 | | Alcohols & Phenols |
| Week 5 | Chapter #5-6 | | Aldehydes & Ketones |
| **Feb. 20** | **President's Day- No Class** | | |
| Week 6 | Chapter #6 **Exam #2 Chapters 5 & 6** | | absorption spectroscopy |
| Week 7 | Chapter #7 | | carboxylic acids |
| Week 8 | Chapter #8 Amides & Amines | | extraction of caffeine |
| Week 9 | Chapter 9 Stereoisomerism | | synthesis of aspirin |
| | **Exam #3 – Chapters 7,8 & 9** | | |
| **March 13-19** | **Spring Break** | | **No Lab** |
| Week 10 | Chapter #10 carbohydrates | | Forensics |
| Week 11 | Chapter #11 lipids | | crime busters |
| Week 12 | Chapter #12 proteins | | food analysis |
| **April 7-April 10** | **Easter Break** | | |
| Week 13 | Chapter #13 nucleic acid | | urinalysis |
| | **Exam #4 Chapters 10-13** | | |
| Week 14 | Chapter #14-15 Enzyme &Metabolism | | titration of vitamin C |
| Week 15 | Chapters #16-17 amino & fatty acid Metabolism | | food calories |
| Week 16 | Chapters #17-18 nutrition | | |
| **Final Exam** | **May 9 9-11am** | | |

## Course Requirements: Grading is based on the percent of total possible points you obtain.

This course will have approximately 1000 points

14 quizzes (10-20 points each)
3 Exams (120 points each)
Laboratory and assignment (400 points)**.** ,

Missed exam/work cannot made up unless prior arrangements have been made and must be made up within the allotted time. It is the responsibility of the student to schedule make-up work in the agreed amount of time.

Final letter grades are assigned based on the following criteria:

A = 89.5-100% of the total points
B = 79.5 - <89.5% of the total points
C = 69.5 - <79.5% of the total points
D = 59.5 - <69.5% of the total points
F = <59.5% of the total points

## General Education Competency/Goal # 1: Identifies the interrelationships between humans and their environment.

LO 2: Demonstrates an understanding of the natural environment
LO 3: Applies scientific information in everyday life

## Relationship to Campus Focus/Theme

This course addresses the campus theme by incorporating the latest diagnostic procedures, treatments, and other technologies that are used to identify and treat human diseases and disorders.

## Classroom Policies

1) Be respectful of other students and the instructor
2) Notify the instructor of any coursework that may be late prior to the due date

## Student Email Policy

Dakota College at Bottineau is increasingly dependent upon email as an official form of communication. A student's campus-assigned email address will be the only one recognized by the campus for official mailings. The liability for missing or not acting upon important information conveyed via campus email rests with the student.

## Academic Integrity

According to the DCB Student Handbook, students are responsible for submitting their own work. Students who cooperate on oral or written examinations or work without authorization share the responsibility for violation of academic principles, and the students are subject to disciplinary action even when one of the students is not enrolled in the course where the violation occurred. The Code detailed in the Academic Honesty/Dishonesty section of the Student Handbook will serve as the guideline for cases where cheating, plagiarism or other academic improprieties have occurred.
All students are expected to adhere to the highest standards of academic integrity. Dishonesty in the classroom or laboratory and with assignments, quizzes, and exams is a serious offense and is subject to disciplinary action by the instructor and college administration. For more information, refer to the Student Handbook.

## Disabilities and Special Needs

Students with disabilities or special needs (academic or otherwise) are encouraged to contact the instructor and Disability Support Services.
If you have a disability for which you need accommodations, you are encouraged to contact your instructor and Erica Hamilton at 701-228-5672 to request disability support services as early as possible during the beginning of the semester.

## Title IX:

Dakota College at Bottineau (DCB) faculty are committed to helping create a safe learning environment for all students and for the College as a whole. Please be aware that all DCB employees (other than those designated as confidential resources such as advocates, counselors, clergy and healthcare providers) are required to report information about such discrimination and harassment to the College Title IX Coordinator. This means that if a student tells a faculty member about a situation of sexual harassment or sexual violence, or other related misconduct, the faculty member must share that information with the College's Title IX Coordinator. Students wishing to speak to a confidential employee who does not have this reporting responsibility can find a list of resources on the DCB Title IX webpage.