

**Dakota College at Bottineau Course Syllabus**  
**Spring**

**Course Prefix/Number/Title:** Chem 116, Introductory Organic and Bio-Chemistry

**Number of credits:** 4 credits

**Course Description:** This course is an introduction to organic and bio-chemistry. 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.

**Instructor:** Angie Bartholomay

**Office:** Nelson Science Center 111

**Office Hours:** M,W,F 10-11am and M, F 2-3pm

**Phone:** 228-5471

**Email:** [angela.bartholomay@dakotacollege.edu](mailto:angela.bartholomay@dakotacollege.edu)

**Lecture:** MWF 9:00am-9:50, NSC 103; Lab Th 8-10am NSC 121

<u>Lecture Schedule</u>	<u>Topics &amp; Reading Assignments</u>	<u>Lab Schedule</u>	<u>Topic</u>
Week 1	Intro to organic chemistry Chapter #3	no lab	
Week 2	Chapter #3-4 hydrocarbons	Molecular Models	
<b>Jan. 20</b>	<b>Martin Luther King Day – No Class</b>		
Week 3	Chapter #4 <b>Exam #1 Chapter # 3-4</b>	ID of Hydrocarbons	
Week 4	Chapter #5	Alcohols & Phenols	
Week 5	Chapter #5-6	Aldehydes & Ketones	
<b>Feb. 17</b>	<b>President's Day- No Class</b>		
Week 6	Chapter #6 <b>Exam #2 Chapters 5 &amp; 6</b>	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	
	<b>Exam #3 – Chapters 7,8 &amp; 9</b>		
<b>March 16-22</b>	<b>Spring Break</b>	<b>No Lab</b>	
Week 10	Chapter #10 carbohydrates	Forensics	
Week 11	Chapter #11 lipids	crime busters	
Week 12	Chapter #12 proteins	food analysis	
<b>April 10-April 13</b>	<b>Easter Break</b>		
Week 13	Chapter #13 nucleic acid	urinalysis	
	<b>Exam #4 Chapters 10-13</b>		
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		
<b>Final Exam</b>	<b>May 9 9-11am</b>		

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

**Course Requirements:** Class and lab attendance is necessary to be successful in class because each new topic builds on the topics that precede it. \*Practice assignments will be given and graded random basis, these problems will help prepare for quizzes and exams.

**General Education Goals/Objectives:**

Objective 3: Demonstrates an awareness of how science influences everyday life

Skill 1: Utilizes scientific information in daily decision making

Skill 2: Recognizes the role of science in nature and society

**Relationship to Campus Theme:** A greater understanding of biochemistry and organic chemistry will lead to a greater respect for the environment with components of technology used to reach this understanding. Students will explore how biochemistry and organic chemistry career options.

**Classroom Policies:** Grades will be based on total points using the following percentage system:  
100-90, A; 89-80,B; 79-70,C; 69-60,D; <60%F.

Assessment methods- measurement of the expected general education outcomes will be achieved through exams, quizzes, laboratory exercises and a final project.

**Exams-** There will be 5 exams during the course of the semester. All exams will be worth 100 points. If you are going to miss an exam, you are expected to make it up ahead of time. Make up exams will be worth 70%, which must be made up within a week following the original exam.

**Lecture-** Lecture outlines are available on our moodle shell. Exam questions will originate from lectures and end of the chapter questions.

**Quizzes-** There will be 10-12 quizzes. End of the chapter questions will not be graded but may be used to assist you on the quizzes. The quizzes cannot be made-up.

**Laboratory-** The laboratory portion of the course provides an opportunity to integrate lecture concepts with observable activities. Lab reports are due during the following lab period. Labs not turned in on time are worth 50% of the graded score on the lab.

**Cell phones- Need to be turned off and stored during class!!!! No headphones!**

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.

### Disabilities or Special Needs:

Students with disabilities or special needs (academic or otherwise) are encouraged to contact the instructor and Disability Support Services within the first two weeks of the semester to line up accommodations.

### 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.