

Chem 104x Organic and Biochemistry
Spring Session, 2019
A Survey of Organic Chemistry and Biochemistry

Instructor: Dr. Lawrence Duffy
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(WRRB)
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Office hours: 4:30 Monday, Reich 184

Lecture: 201 Reichardt Building 3:30pm
Lab: Reichardt Bldg, TBA



Specific Coverage:

- I. Introduction to Organic Chemistry and Functional Groups
- II. Carbohydrates
- III. Classification and Functional Roles of Lipids
- IV. Structure and Function of Proteins
- V. Nucleic Acids, Gene Expression & Protein Synthesis
- VI. Catabolic Pathways and Energy Production
- VII. Food Security and Society
- VIII. Climate Change and Health

Course Goals: This is a general education course. *Structure is Function* is a fundamental theme in science course. Molecular shape determines function. Students who successfully complete this course will have an understanding of the structure and function of molecules that are the building blocks of living systems. Students will develop an appreciation for the

relationship between the three-dimensional chemical structure of the major classes of biological macromolecules (proteins, lipids, carbohydrates and nucleic acids) and their particular functional roles. Armed with an understanding of the biochemical principles of living systems, students will be more informed consumers and be better prepared to contemplate the

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Laboratory Projects: Any projects are intended to explain a core research concept to the class. Projects are intended to spur your creativity.

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UAF Attendance Policy:
You are expected to attend classes regularly; unexcused absences may result in a failing grade. You are responsible for conferring with your instructor concerning absences and the possibility

<http://www.uaf.edu/sssp/>

<http://www.>

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Support Services: Support can be obtained through the University of Alaska Library System.

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Course Plan and Calendar:

Week	Chapter	Topic	Assignment
1	10	Syllabus	
1	10	Organic Chemistry-Structural formulas/ isomers	
1	10	Organic Chemistry- Functional groups	
2	11/12/13	Organic Chemistry- Alkanes, Alkenes, Alkynes, Benzene	
2/3	14/15	Alcohols, and stereoisomers	
		Exam 1	
4	16/18	Amines and Esters	
5	20	Carbohydrates	
6	21	Lipids	
		Exam 2	
7	22	Proteins – Structure & Function	
8	23	Enzymes	
		Exam 3	
9	24	Chemical Communication	
10	25	Nucleic Acids, Heredity	
11	26	Gene Expression and Protein Synthesis	
12	26	Mutations and oncogenes	
		Exam 4	
13	27	Metabolism	
13	27	Bioenergetics/ATP production	

