

CHEM 320

Biological Chemistry

INSTRUCTOR	Contact	Office Hours
Dr. Danielle M. Goken	Pfahler 205B dgoken@ursinus.edu ext: 2213	M: 11:00-12:00 noon W: 8:00-9:00 am F: 1:00-2:00 pm Or by appointment
REQUIRED MATERIALS	<i>Principles of Biochemistry 4th ed.</i> By Horton, Moran, Scrimgeour, Perry and Rawn	
SUGGESTED MATERIALS	Organic chemistry textbook	
CLASS MEETINGS	10:00 – 10:50 am MWF	
COURSE WEB PAGE	A Blackboard site has been established for this course. Be sure to check it often as updates to the syllabus and other important information will be posted. All course handouts will be posted on the site.	

Catalog Description: A study of various classes of compounds that serve important functions in biological systems. Topics may include proteins, carbohydrates, lipids, enzymes, DNA, RNA, porphyrins, redox chemistry, bioenergetics, vitamins, metal-containing proteins, pharmaceuticals, and mechanisms of biological reactions. Prerequisites: CHEM-205 and 206. Three hours of lecture per week. *Three semester hours.*

Note: Students receiving credit for BCMB-351 cannot receive credit for CHEM-320.

GENERAL CLASS POLICIES

1. All students are responsible for reading and understanding the information presented in this syllabus. CHEM 320 course requirements apply equally to all students, regardless of whether they have read this document or not.
2. Cheating and all other forms of academic dishonesty are not allowed and will be prosecuted to the fullest extent possible. Please see the section on **Academic Honesty** for more information.
3. If you wish to report a grading error or a grade injustice, you must contact the instructor no later than five days after the item in question has been returned to you. *No regrades and no redresses for missed points will occur if such contact is not made.*
4. Attendance at examinations is required. In general, make-up exams will NOT be administered. Anyone who is absent from an examination will receive the grade of “zero” for that exam, *except in the case of an excused absence.* The student who is legitimately ill *must* present a physician’s excuse, stating not only that the student was seen by a physician, but also that the student’s illness made it impossible for her or him so sit for the examination.

Illness before an exam is not considered to be a legitimate excuse as you are expected to keep up-to-date with the material and not allow the bulk of your studying to be done immediately before the exam. If death in the immediate family occurs, documentation must be provided. College-sponsored activities (such as athletic events, musical programs, etc.) are not considered valid reasons for missing an exam. Such conflicts should be brought to the attention of the instructor during the first week of classes. In extraordinary cases, at the discretion of the instructor, a make-up exam may be given.

5. Use of cell phones during lectures and exams is prohibited. This includes answering incoming calls, checking messages, text messaging, and making calls. Students who violate this policy will be asked to leave the class and will receive a zero on all assignments or exams for the day.
6. The contents of this syllabus are subject to change. Any changes will be preceded by appropriate announcements in class.

ATTENDANCE POLICY

For this course, attendance will be taken and used to help determine borderline grade determinations. Attendance is required for examinations and during student presentations. All of the College's attendance policies will be followed in this course. Please see page 42 of the Course Catalogue for more information.

CLASSROOM CANCELLATION POLICY

In the unlikely event that class is cancelled, the following steps will be taken to notify students:

1. A voice message will be left at my extension (2213).
2. Should a campus-wide cancellation of classes occur, the Dean will notify all faculty and students through use of a designated phone number (610-409-3700) and email (Dean Levy).

EXAMS

There will be three regular exams and one final exam. Exams will be administered during regularly scheduled class meeting times according to the accompanying schedule. The final must be completed in order to pass the course, regardless of the total points accumulated by the student.

GRADING

Grades in this course will be based on the following percentages:

Exam 1:		22%
Exam 2:		22%
Exam 3:		22%
Paper and Presentation:		8%
Final:	+	<u>26%</u>
Total:		100%

Dr. Goken reserves the right to curve the grades and to change the grading scheme.

ACADEMIC HONESTY

From the Ursinus College Course Catalog, page 42–43:

“Ursinus College is a small community which functions by a social contract among students, faculty administration and alumni. In order for the spirit of community to endure and thrive, this agreement, based upon shared values and responsibilities and a sense of mutual respect, trust and cooperation, must be preserved. Students have an obligation to act ethically concerning academic matters and the faculty has a responsibility to require academic honesty from students and to be vigilant in order to discourage dishonesty.

Lying, cheating, stealing, plagiarism and other forms of academic dishonesty violate this spirit of mutual respect and collaboration and corrode the atmosphere of openness and free inquiry upon which the educational process is based. Such activities are demeaning and potentially damaging to those who undertake them. Moreover, academic dishonesty is damaging to the student body as a whole, in that it cheapens the achievement of the honest majority of students and subverts the integrity and reputation of the institution with which they will be identified for the rest of their lives....

The student body, the faculty, and the administration of Ursinus College therefore unanimously condemn academic dishonesty in all its forms and affirm that it is the responsibility of all members of the college community to prevent such activity.”

A few further notes on this issue:

1. You are cheating if you let someone copy off of you, and you will be prosecuted as such.
2. You will be prosecuted as a cheater, even if you “didn’t know it was wrong”.
3. This course will adhere to the strictest definition of cheating, even if other courses at this college do not. Do not use behavior that was deemed “acceptable” in other courses as a defense of your actions.

WITHDRAWAL POLICY

It is the responsibility of the student to withdraw from the class according to the college’s procedures. March 22 is the last day to drop a course without recording a failure.

TENTATIVE SCHEDULE OF EVENTS

This schedule is subject to change. Textbook readings should be done both before and after a given lecture.

Week	Date	Topic	Text Reading
1	Jan 16	Introduction to Biochemistry	Pages 1-15
	Jan 18	Water, pH, acid/base equilibrium	26-49
	Jan 19	Amino acids: structure, pK _a , pI	52-66
2	Jan 23	Peptides and Primary structure of proteins	66-77
	Jan 25	Analytical techniques and Sequencing	66-77
	Jan 27	Proteins-secondary structure	84-98
3	Jan 30	Proteins-tertiary and quaternary structure	98-114
	Feb 1	Myoglobin and hemoglobin	116-123
	Feb 3	Enzymes	129-142
4	Feb 6	Enzyme Inhibition	142-147
	Feb 8	Enzymes	148-154
	Feb 10	Exam 1	
5	Feb 13	Coenzymes and Vitamins	192-218
	Feb 15	Coenzymes and Vitamins	192-218
	Feb 17	Carbohydrates	222-230
6	Feb 20	Structure Elucidation of Glucose	
	Feb 22	Derivatives of Carbohydrates	231-234
	Feb 24	Disaccharides and polysaccharides	234-241
7	Feb 27	Conjugates	241-249
	Mar 1	Lipids	253-264
	Mar 3	Steroids	264-267
8	Mar 6	Membranes	267-292
	Mar 8	Metabolism	197-324
	Mar 10	Exam 2	
9	Mar 13	Spring Break	
	Mar 15		
	Mar 17		
10	Mar 20	Metabolism	197-324
	Mar 22	Glycolysis—Student presentations	327-340
	Mar 24	Fate of pyruvate and regulation of glycolysis	340-350
11	Mar 27	Citric acid cycle	384-409
	Mar 29	Citric acid cycle	384-409

	Mar 31	Nucleic acids	583-589
12	Apr 3	DNA	590-598
	Apr 5	RNA	599
	Apr 7	Replication	615-633
13	Apr 10	DNA repair and recombination	634-643
	Apr 12	Transcription	647-659
	Apr 14	Protein Synthesis	683-716
14	Apr 17	Protein synthesis	683-716
	Apr 19	Exam 3	
	Apr 21	Student Presentations	
15	Apr 24	Student Presentations	
	Apr 26	Student Presentations	
	Apr 28	Student Presentations	
16	May 10	Final Exam	