

**BCHM 100 Syllabus
Spring 2019**

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LECTURE TIME AND PLACE:

Tuesday and Thursday, BCHM 105, 9:30am - 10:20am. All lectures will be recorded, and will be available for students who miss a class or who would like to review a lecture. They can be downloaded from the "EchoCast" link on the Blackboard Learn page for this course.

COURSE OBJECTIVES

Students in BCHM 100 aren't necessarily biochemists. Some have future career interests in human or veterinary medicine, plant sciences, and pharmacy, but many just want to understand how living things "work". In this course, we will explore what happens when things "stop working" as a way to understand topics as varied as human disease, nerve gases, herbicides, and Siamese cats. In doing so, we will explore the scale, structure, and function of small molecules and proteins and learn to visualize biochemical molecules and processes. In parallel, we will discuss these topics in the context of technologies and issues relevant to society such as the development and deployment of transgenic plants and the consequences of genetic conditions such as PKU and sickle cell anemia.

LEARNING OUTCOMES

- BCHM 100 students will understand the molecular principles of life based on the core disciplines of biology, chemistry and physics.
- BCHM 100 students will understand the scientific method.
- BCHM students will appreciate the ethical issues facing professionals in the life sciences.
- BCHM 100 students will understand the contributions of our discipline to society, including improvements to medicine, agriculture, the economy and the environment.

TEXTBOOK

There is no recommended textbook for this course. Links to appropriate web resources for additional reading will be provided in your lectures notes and via the Purdue University Blackboard Learn site at: <http://www.itap.purdue.edu/learning/tools/blackboard/>

COMPUTERS

Many lecture activities will require the use of a laptop or tablet computer. Necessary software (Pymol) can be downloaded via the links on Blackboard.

BLACKBOARD

The syllabus for the course, lecture notes, and grading keys for quizzes and exams will be available via the Purdue University Blackboard Learn site at:

<http://www.itap.purdue.edu/learning/tools/blackboard/>

ASSESSMENT

The final exam will be cumulative and will be held during exam week at a time and place that will be determined by the Registrar later in the semester. The date and location will be announced in class.

The grading for this course will be as follows:

Midterm Exam	100 points
Final Exam	100 points
Quizzes (4 @ 25 points each)	100 points
Assignments (5 @ 15 points)	75 points
Blackboard pop-quizzes (2-3 points each, in-class)	25 points

The cutoff values for letter grades are as follows:

360 points	A
320 points	B
280 points	C
240 points	D
239 points and below	F

Missing a quiz or exam will result in a grade of 0 being recorded unless documented justification for the absence is presented. Any request to be excused from a quiz or exam must include official documentation (doctor's note, request from academic advisor, etc) explaining why the exam was or will be missed. Makeup tests will be scheduled in consultation with the instructor.

Blackboard pop-quizzes will be scheduled randomly in-class without notice. You will have until the end of the day to complete each Blackboard pop-quiz, but there will be no email announcement regarding these quizzes and these dates are not included on the last page of your syllabus. There will be no extension on these pop-quizzes unless official documentation is provided.

If you have any disagreements with the way any of your quizzes or exams have been graded, please consult the grading key and then discuss them with the lecture TA. In the event this does not resolve your concerns, please take them up with the instructor.

Requests for re-grades must be submitted no later than the end of the second class period after the graded test or assignment has been returned.

EXTRA CREDIT

There will be no opportunity for extra credit unless otherwise announced by the instructor.

OBTAINING EXTRA HELP

The lecture TA will hold office hours for at least 3 hours per week, and will be able to answer additional questions by appointment.

Dr. Weake will be available to answer your questions immediately after class, during office hours, or by appointment (arranged in class or by e-mail). Alternatively, you can submit questions by e-mail that can be answered in class or by return e-mail.

ACADEMIC MISCONDUCT

The student-initiated Purdue Honors Pledge is: *"As a boilermaker pursuing academic excellence, I pledge to be honest and true in all that I do. Accountable together - we are Purdue."*

Academic misconduct of any kind will not be tolerated in any course offered by the Department of Biochemistry. Student resources related to academic integrity can also be found online at www.purdue.edu/odos/aboutodos/academicintegrity.php. You should familiarize yourself with these policies, particularly if you are new to US academic institutions. All apparent violations of these policies will be referred to the Office of the Dean of Students (ODOS).

If the ODOS establishes that you have committed academic misconduct, the **minimal** response will be for your instructor to assign you a zero for the work in question; however, the **standard** response will be for you to receive a failing course grade and have a permanent record of the violation kept on file at the ODOS. These sanctions will be applied at the sole discretion of your instructor. Particularly egregious examples of academic misconduct or repeat offenses will result in you being expelled from the university by the ODOS.

To provide you with an unambiguous definition of academic misconduct, the following text has been excerpted from "Academic Integrity: A Guide for Students", written by Stephen Akers, Ph.D., Executive Associate Dean of Students (1995, Revised 1999, 2003), and published by the Office of the Dean of Students in cooperation with Purdue Student Government, Schleman Hall of Student Services, Room 207, 475 Stadium Mall Drive West Lafayette, IN 47907-2050.

"Purdue prohibits "dishonesty in connection with any University activity. Cheating, plagiarism, or knowingly furnishing false information to the University are examples of dishonesty." [Part 5, Section III-B-2-a, [University Regulations](#)] Furthermore, the University Senate has stipulated that "the commitment of acts of cheating, lying, and deceit in any of their diverse forms (such as the use of substitutes for taking examinations, the use of illegal cribs, plagiarism, and copying during examinations) is dishonest and must not be tolerated. Moreover, knowingly to aid and abet, directly or indirectly, other parties in committing dishonest acts is in itself dishonest." [University Senate Document 72-18, December 15, 1972] More specifically, the following are a few examples of academic dishonesty which have been discovered at Purdue University.

- substituting on an exam for another student
- substituting in a course for another student
- paying someone else to write a paper and submitting it as one's own work

- giving or receiving answers by use of signals during an exam
- copying with or without the other person's knowledge during an exam
- doing class assignments for someone else
- plagiarizing published material, class assignments, or lab reports
- turning in a paper that has been purchased from a commercial research firm or obtained from the internet
- padding items of a bibliography
- obtaining an unauthorized copy of a test in advance of its scheduled administration
- using unauthorized notes during an exam
- collaborating with other students on assignments when it is not allowed
- obtaining a test from the exam site, completing and submitting it later
- altering answers on a scored test and submitting it for a regrade
- accessing and altering grade records
- stealing class assignments from other students and submitting them as one's own
- fabricating data
- destroying or stealing the work of other students

Plagiarism is a special kind of academic dishonesty in which one person steals another person's ideas or words and falsely presents them as the plagiarist's own product. This is most likely to occur in the following ways:

- using the exact language of someone else without the use of quotation marks and without giving proper credit to the author
- presenting the sequence of ideas or arranging the material of someone else even though such is expressed in one's own words, without giving appropriate acknowledgment
- submitting a document written by someone else but representing it as one's own"

CLASS ATTENDANCE

In accordance with University policy, you are expected to attend every scheduled class. If you have a valid reason for missing class such as a University-sponsored activity, religious observances, illness, or family emergency, the instructor or TA will assist you in obtaining information and materials you may have missed. Students who skip class without a valid excuse should not expect the instructor or TA to supply class notes or provide special help. For the official university policy, see:

www.purdue.edu/odos/services/classabsence.php and
<http://www.purdue.edu/univregs/academicprocedures/classes.html>

EMERGENCY PREPAREDNESS

In the event of a major campus emergency, course requirements, deadlines and grading percentages are subject to changes that may be necessitated by a revised semester calendar or other circumstances. To get information about changes in this course consult the class Blackboard Learn site or e-mail or phone the instructor.

CAPS INFORMATION:

Purdue University is committed to advancing the mental health and well-being of its students. If you or someone you know is feeling overwhelmed, depressed, and/or in need

of support, services are available. For help, such individuals should contact Counseling and Psychological Services (CAPS) at (765)494-6995 and <http://www.purdue.edu/caps/> during and after hours, on weekends and holidays, or through its counselors physically located in the Purdue University Student Health Center (PUSH) during business hours.

ON-LINE COURSE EVALUATIONS

During the last two weeks of the semester, you will be provided an opportunity to evaluate this course and your instructor(s). To this end, Purdue has transitioned to online course evaluations. On Monday of the fifteenth week of classes, you will receive an official email from evaluation administrators with a link to the online evaluation site. You will have two weeks to complete this evaluation. Your participation in this evaluation is an integral part of this course. Your feedback is vital to improving education at Purdue University. I strongly urge you to participate in the evaluation system.

NON-DISCRIMINATION POLICY STATEMENT

Purdue University's non-discrimination policy will be upheld in this classroom. Purdue University is committed to maintaining a community which recognizes and values the inherent worth and dignity of every person; fosters tolerance, sensitivity, understanding, and mutual respect among its members; and encourages each individual to strive to reach his or her own potential. In pursuit of its goal of academic excellence, the University seeks to develop and nurture diversity. The University believes that diversity among its many members strengthens the institution, stimulates creativity, promotes the exchange of ideas, and enriches campus life.

Purdue University views, evaluates, and treats all persons in any University related activity or circumstance in which they may be involved, solely as individuals on the basis of their own personal abilities, qualifications, and other relevant characteristics.

LECTURE SCHEDULE

Lecture	Date	Topic	Quiz*	Assignment*
<i>* Assignment and quiz dates may change with notice.</i>				
1	1/8	Introduction, subcellular organization		
2	1/10	Size, scale and estimation		Homework 1 assigned
3	1/15	Metabolic disorders – PKU I		
4	1/17	The central dogma		
5	1/22	The genetic code and mutations		
6	1/24	PKU II		
7	1/29	PKU III	Quiz 1	Homework 2 assigned
8	1/31	Metabolic pathways		
9	2/5	Water and hydrogen bonding		
10	2/7	Amino acids I		
11	2/12	Amino acids II		Homework 3 assigned
12	2/14	Alcaptonuria	Quiz 2	
13	2/19	Proteins I		
14	2/21	Proteins II		
15	2/26	Pymol tutorial/assignment (TA only)		Homework 4 assigned
16	2/28	Proteins III		
17	3/5	<i>Mid-term exam review (TA only)</i>		
18	3/7	Mid-term exam	Mid-term exam	
X	3/12	Spring break		no class
X	3/14	Spring break		no class
19	3/19	Insecticides and nerve gases		
20	3/21	Enzymes I		
21	3/26	Enzymes II		Homework 5 assigned
22	3/28	Roundup I		
23	4/2	Antibiotic resistance I		Quiz 3
24	4/4	Antibiotic resistance II		
25	4/9	Sickle cell anemia		
26	4/11	Malaria and gene transfer		
27	4/16	Hemoglobin I	Quiz 4	
28	4/18	Hemoglobin II		
29	4/23	<i>Final exam review (TA only)</i>		
30	4/25	<i>Office hours/Extra class (if necessary).</i>		
X	4/29 – 5/4	EXAM WEEK		no class