

BCMB 401 Fall Semester 2009

Lecture: MWF 8:00 to 8:50 AM Science and Engineering Rm 307

Instructor: Dr. Dan Roberts (bcmb401@yahoo.com) Office Hours: W 9:30 –11:00; R 3 – 4:30
 Dr. Cynthia Peterson (cpbiochem@yahoo.com) Office Hours: M 2:30 – 3:30, T noon – 1:30

Discussion Sessions (TA name in parenthesis):

Section 001 10:10 AM Fri HH 209 (*Pintu*) **Section 002** 12:20 PM Mon Bu 412 (*Paul*)
Section 003 2:30 PM Wed Bec 203 (*Todd*) **Section 004** 10:10 AM Mon Bec 238 (*Pintu*)
Section 005 2:30 PM Fri Bu 476 (*Pintu*) **Section 006** 11:15 AM Mon Bu 472 (*Paul*)
Section 007 9:05 AM Fri WLS M309 (*Todd*)

Textbook: **Biochemistry Sixth Edition** Berg, Tymoczko and Stryer

<i>Date</i>	<i>Topic</i>	<i>Reading in Stryer</i>	<i>Instructor</i>
8/19 W	Water, Noncovalent Bonding of Molecules	pp. 7-11	Roberts
8/21 F	pH and buffer	pp. 14-17	Roberts
8/24 M	Protein structure I: amino acids and 1 ^o structure	pp. 27-36	Roberts
8/26 W	Protein structure II: 2 ^o structure	pp. 36-46	Roberts
8/28 F	Protein Structure III: 3 ^o and 4 ^o structure	pp.46-57	Roberts
8/31 M	Protein Structure III: 3 ^o and 4 ^o structure	pp.46-57	Roberts
9/2 W	Enzyme Selectivity and Kinetics	pp. 205-12	Peterson
9/4 F	Enzyme Selectivity and Kinetics	pp. 213-24	Peterson
9/7 M	LABOR DAY HOLIDAY		
9/9 W	Enzyme Inhibition	pp. 225-31	Peterson
9/11 F	Chymotrypsin mechanism	pp. 241-54	Peterson
9/14 M	EXAM 1		
9/16 W	Carbohydrate structure	pp. 304-313	Roberts
9/18 F	Carbohydrate/fatty acid structure	pp. 315-6; 326-32	Roberts
9/21 M	Lipids and Membranes	pp. 327; 333-7; 340-3	Roberts
9/23 W	Membrane Transport	pp. 351-7; 360-1	Roberts
9/25 F	Regulation: Allostery Hemoglobin	pp. 183-92	Peterson
9/28 M	Regulation: Allostery ATCase	pp. 275-82; 200-1	Peterson
9/30 W	Regulation: Signal Transduction and G proteins	pp. 284-8; 381-91	Peterson
10/2 F	EXAM 2		
10/5 M	Metabolism Overview: Co-enzymes and Energetics	pp. 409-16; 420-4	Peterson
10/7 W	Glycolysis and gluconeogenesis	pp. 433-67	Peterson
10/9 F	Glycolysis and gluconeogenesis	pp. 433-67	Peterson
10/12 M	Pyruvate Dehydrogenase	pp. 475-81	Roberts
10/14 W	Pyruvate Dehydrogenase/Citric Acid Cycle	pp. 482-90; 490-4	Roberts
10/16 F	FALL BREAK		
10/19 M	Citric Acid Cycle	pp. 482-90; 490-4	Roberts
10/21 W	Oxidative Phosphorylation	pp. 502-4; 506-16; 533	Peterson
10/23 F	Oxidative Phosphorylation	pp. 502-4; 506-16; 533	Peterson
10/26 M	EXAM 3		
10/28 W	Oxidative Phosphorylation	pp. 521-26; 529-30; 532-4	Peterson
10/30 F	Photosynthesis Light Reactions	pp. 541-5; 548-56	Roberts
11/2 M	Calvin Cycle	pp. 565-8; 570-3	Roberts
11/4 W	Pentose Phosphate Pathway	pp. 577-86	Peterson
11/6 F	Glycogen Breakdown	pp. 592-598	Peterson

11/9 M	Glycogen Biosynthesis	pp. 604-606; 611-612	Peterson
11/11 W	Glycogen Metabolism Regulation	pp. 598-604; 607-11	Roberts
11/13 F	Fatty Acid Metabolism	pp. 617-26	Roberts
11/16 M	EXAM 4		
11/18 W	Fatty Acid Metabolism	pp. 634-40	Roberts
11/20 F	Fatty Acid Metabolism	pp. 640-2; 768-70	Roberts
11/23 M	Protein Breakdown/Ubiquitin	pp. 649-655	Peterson
11/25 W	Amino acid breakdown	pp. 656-61	Peterson
11/27 F	Thanksgiving Holiday		
11/30 M	Urea Cycle	pp. 661-666	Peterson
12/4 F	FINAL EXAM 8-10 AM		

n.b., This syllabus is tentative and subjects covered may change depending on progress during the course. Also specific assigned readings will be put online on Blackboard before lecture. The lecture is taken from these and you should read them before attending.

Grading:

Midterm Exams (four in class)	400 points total
Discussion Section (quizzes and homework)	100 points total
Clicker Quizzes/Attendance	75 points total
Final Exam (comprehensive)	200 points

*Your final grade will be based on the score of **all** exams and quizzes. The grading scale will be based on the overall performance of the class with the class average typically a letter grade of C.*

Midterm Exams:

These are each worth 100 pts and occur on the dates noted in the syllabus. Make up exams are not normally given except in unusual circumstances as described below. The score of **all** exams will be counted towards the final grade. A study guide will be posted at the Blackboard site approximately one week before the examination and the instructors will have a review session about two days before the exam.

Grades on exams are final. The only situation in which we will review an exam grade is in the case of: **1.** a misaddition or **2.** if you feel **strongly** that the exam has been **grossly** misgraded. In this case, you have **one week** after the exam is returned to resubmit to us in **writing** the reason you wish to have the exam reviewed. You will need to bring a basic calculator capable of doing logarithms and exponentials (this is your responsibility and unless you are good at doing logarithms in your head we suggest that you remember your calculator on exam day). **However, the use of programmable graphing calculators, cell phones and hand held computers will not be allowed during examinations.**

Discussion Section Quizzes and Clickers:

Attendance at discussion section is mandatory. Scheduled quizzes will be given in discussion sections, totaling 100 points.

In addition to discussion section quizzes, we will also administer non-scheduled short answer/quick response quizzes ("clicker quizzes") during the class period to check on comprehension of major concepts from lectures. These will be unannounced and will require the use of "clickers", radio frequency devices that you will use to answer wirelessly via a central database. You are expected to **bring your clicker to every class** and log in. It is expected that you will bring **only your clicker and no others**. Anyone caught with two clickers (i.e., yours and a friend for whom you might be covering) will have both clickers

confiscated and will be assigned a zero grade for the clicker portion of the course. Also, you are not allowed to consult your class notes or talk to your colleagues during the clicker quiz. There are no exceptions to this rule. Grading on clicker quizzes will be 50% attendance, and 50% for correct answers for a total of 75 points at the end of the term. For example, if you log in with your clicker and get 2/4 correct on the quiz, this would result in a grade of 75%. If you fail to attend class during a clicker quiz this will result in a grade of 0% for that quiz. The four lowest clicker scores will be dropped from your clicker grade at the end of the term. The purpose of clicker quizzes are two fold: 1. It helps the instructors monitor class understanding of the material; 2. It encourages the students to stay up with the material on a daily basis. Remember, clickers are your friend: if you show up to class and take the quizzes your grade will benefit.

2. Make-ups:

In general you will not be allowed to make up missed quizzes or exams **except in unusual circumstances** (provided in writing ahead of time). If you are ill at the time of the exam and are unable to attend, you will need to contact the instructor or the BCMB office (4-5148), ahead of time and bring a note signed by a doctor upon returning to class. At that time a firm make-up date and time, generally within three days of the missed date will be scheduled. Make ups will not be offered for oversleeping or missing class.

3. Office hours

Please respect the office hour times given for the instructor. If these times are inconvenient, then make an appointment. The instructors are often available for a few minutes after class but please do not knock on our door before class. This is when we are organizing lecture and we will be unavailable. A review session will be given before each exam, usually in the evening two days prior to the examination date. It is in your best interest to attend these. This course is taught in an integrated fashion by both instructors, and questions about any of the course material can be directed at either.

4. Discussion Section

The class will meet as a whole during three lecture periods a week. In addition, there is a mandatory discussion section in which the TAs will be available to answer your questions and help you with problems and study guides. In addition, quizzes will be given in discussion section. These will constitute 100 points of the final grade. Schedules for the discussion section quizzes are posted on the course web site.

5. Honor Statement

Finally, based on some unfortunate occurrences in previous terms, the instructor feels the need to remind you of the Honor Statement of the University:

“An essential feature of the University of Tennessee is a commitment to maintaining an atmosphere of intellectual integrity and academic honesty. As a student of the University, I pledge that I will neither knowingly give nor receive any inappropriate assistance in academic work, thus affirming my own personal commitment to honor and integrity.”

It is expected that you will respect the spirit of this honor statement. Anyone caught cheating will at a minimum be given a zero grade on the quiz or examination in question, and depending on the severity of the offense, may be given an “F” in the course. Without exception, **all instances** of academic dishonesty will be formally reported to the Office of Student Judicial Affairs.