The Department of Biochemistry & Molecular Biophysics
BIOC 460 Proteins and Metabolism

Class Information 2008 [PDF version for printing]

Office Hours:

Dr. Miriam Ziegler (Instructor, Course Coordinator) Mon and Wed, 3:50-5:15 pm, after class in ILC 120 and then in BioW 345A; or by appointment: 626-9388 zieglerm@u.arizona.edu	**Dr. Roger Miesfeld** (Instructor) Thurs and Fri 11:00 am-12 noon, BioW 518; or by appointment: 626-2343 rlm@u.arizona.edu
Ms. Swapna Aravind (T.A.) BioW 530, 621-5113 Wed and Thurs 9:00-10:00 a.m. in BioW 251A swapnaa@email.arizona.edu	**Ms. Salma Kaochar** (T.A.) LSS 409, 621-9358 Fri 10:00-11:00 am and 1:00-2:00 pm in BioW 251A salma@email.arizona.edu
Ms. Deboleena Sarkar (T.A.) Mon. 9:45-11:45 a.m. in BioW 251A dsarkar@email.arizona.edu	

Examinations: Four one-hour examinations (100 points each) will be given as indicated on the schedule. The last hour examination will be the last day of classes, for which the course has special permission from the Dean of Science **(3:00-3:50 p.m. Wed., May 7, 2008)**. In addition, there will be four 10-min quizzes (20 points each) during class. The exam and quiz format is based on short answers and fill-in-the-blank type questions, with some calculations and perhaps multiple choice questions on quizzes. Each quiz may cover material to be discussed on the day of the quiz, i.e., preparation for class, as well as questions from earlier lectures. One quiz will be dropped, either one missed quiz or the lowest quiz score. There will be no make-up quizzes, and no excused absences from the 10-min quizzes need to be documented by you *unless you miss more than one quiz, **both absences being for excused reasons***. In this unusual circumstance, you should bring the documentation for ***both*** missed quizzes to Dr. Ziegler ***within 1 week after the second (excused) missed quiz***.
Exams and exam review/help sessions this semester are scheduled for the following times:

HOUR EXAMS (all in ILC 120)	REVIEW/HELP SESSIONS
Mon. Feb. 11 (3:00-3:50 pm)	Thurs Feb. 7: 4:00-5:00 pm, **EDUC 211**
Mon. Mar. 10 (3:00-3:50 pm)	Thurs Mar. 6: 4:00-5:00 pm, **Chavez 111**
Mon. Apr. 14 (3:00-3:50 pm)	Thurs Apr. 10: 4:00-5:00 pm, **Chavez 111**
Wed. May 7 (3:00-3:50 pm)	Mon. May 5: 4:00-5:00 pm, **ILC 120**

The hour examinations must be taken at scheduled times. If possible, an examination may be rescheduled for medical reasons, or death in the family, but only if the emergency is **documented** by an appropriate letter. If a medical emergency does arise, it is the student's responsibility to contact Dr. Ziegler (course coordinator) by telephone or email **prior to the start** of the examination to reschedule the exam for **the next day.** (The only exception would be for a student who also has an excused absence for the day after the exam, but again, that requires discussion with Dr. Ziegler.) The telephone is by far the most effective means of arranging a time to reschedule an exam, so if you have to leave a voicemail message or send an email, be sure to leave a telephone number where you can be reached.

IMPORTANT NOTE ABOUT CALCULATORS: The course requires a ***non-programmable*** scientific calculator that can do **logs** and **natural logs (ln)** for exams and for some quizzes. Such calculators can be bought at discount stores for less than $10; no sharing of calculators will be permitted during exams and quizzes. **Be sure you understand how to use the calculator (logs and antilogs) before you bring it to an exam. No programmable calculators will be permitted during exams and quizzes, so please don't even ask!**

Regrading of Exams: Requests for regrading of exam answers must be made in writing on your own separate piece of paper attached to the exam and turned in to the instructor in charge of that exam within three class periods (one week) after the return of exams. **DO NOT WRITE ON THE EXAM ITSELF.** In your request, you should explain why your answer is correct. The entire exam may be regraded when any regrading is requested.

Cheating: Cheating will absolutely not be tolerated. The Student Code of Conduct may be found at http://w3.arizona.edu/~studpubs/policies/studcofc.htm. Anyone caught cheating will fail this course and be subject to disciplinary proceedings as prescribed by university policies, described at http://w3.arizona.edu/~studpubs/policies/studdisc.htm. Potential outcomes from this include expulsion from the University. Changing your answer on a test after it has been returned, and requesting a regrading of the exam, is cheating. **We will routinely photocopy 15-25% of the exams to discourage this form of cheating, so don't do it!**

Grades: Grades will be posted on D2L, accessed through http://www.d2l.arizona.edu, with student's Net ID and password.
The final grade will be determined based on the total points out of 460 points: 400 pts from 4 hour exams and 60 pts from the best 3 out of 4 10-min

quizzes. Course grades on a total point basis out of 460 points will be curved if necessary based on overall class performance, but the final course grade cut-offs (minimum *percentage* grades required) for final grades of A, B, C, and D, respectively, will be no higher than 90, 80, 70, 60%. Although an approximate letter grade distribution will be posted for each exam, those posted letter grade distributions for individual exams will be intended simply as general guidelines for students to assess their ongoing performance in the class; we will not record letter grades for individual exams and thus will not agonize over the posted "cut-offs" for each exam. **Students are responsible for checking their grades on D2L to confirm that their recorded exam and quiz scores are correct. Keep your copy of each original graded exam and quiz until the end of the semester to document any discrepancies.**

Lecture Schedule - Spring 2008 (tentative)

Lecture notes (password-protected) will be posted in general by the end of the day before the lecture.
NOTE: Lecture schedule is tentative; revisions will be posted as needed. Check announcements on website.
Print out PDFs of required background (review) on logarithms and on concepts of general chemistry, which includes sample problems and answers, to be sure you are able to work with those concepts. See homepage or "What's New" for times and locations of 1st week general chem review.

Date	Lecture	Topic	6th ed. Chapter, pp.	Instructor
W - Jan 16	1	Introduction, Properties of Water Gen chem review session, offered twice (optional, since it's review, but material is required): **Thurs. Jan. 17, 4:00-5:00 pm, (Chavez 111); and Friday Jan. 18 right after class, 4:00-5:00 pm (ILC 120)**	1	Dr. Ziegler
F - Jan 18	2	Biological Thermodynamics	pp. 11-14 & 208-210	Dr. Ziegler
M - Jan 21		**MLK Holiday - NO CLASS**		
W - Jan 23	3	Amino Acids	2, pp. 25-34	Dr. Ziegler
F - Jan 25	4	Peptides	2, pp. 34-37	Dr. Ziegler
M - Jan 28	5	Proteins, Secondary Structure	2, pp. 37-45	Dr. Ziegler
W - Jan 30	6	Proteins: Tertiary and Quaternary Structure	2, pp. 44-53 pp. 61-62	Dr. Ziegler
F - Feb 1	7	Proteins: Folding; ***Quiz 1***	2, pp. 53-60	Dr. Ziegler
M - Feb 4	8	Protein Function: Myoglobin and Hemoglobin 1	7, pp. 183-192	Dr. Ziegler
W - Feb 6	9	Protein Function: Myoglobin and Hemoglobin 2	7, pp. 192-199	Dr. Ziegler
Th - Feb 7		**Review/Help Session, 4:00-5:00, EDUC 211**		***Dr. Ziegler***
F - Feb 8	10	Enzymes: Introduction (Wed. Feb. 7)	8, pp. 205-216	Dr. Ziegler
M - Feb 11		***EXAM 1***		***Dr. Ziegler***
W - Feb 13	11	Enzymes: Kinetics	8, pp. 216-225	Dr. Ziegler
F - Feb 15	12	Enzymes: Inhibition (Mon. Feb. 12)	8, pp. 225-236	Dr. Ziegler
M - Feb 18	13	Enzymes: Catalytic Strategies 1 (Wed. Feb. 14)	9, pp. 241-254	Dr. Ziegler
W - Feb 20	14	Enzymes: Catalytic Strategies 2	9, pp. 241-254	Dr. Ziegler
F - Feb 22	15	Regulatory Strategies: Allosteric Regulation, Isozymes	10, pp. 275-283	Dr. Ziegler
M - Feb 25	16	Regulatory Strategies: Reversible Covalent Modification	10, pp. 283-288	Dr. Ziegler
W - Feb 27	17	Regulatory Strategies: Regulatory Proteins, Proteolytic Cleavage	14, pp. 389-391; 10, pp. 288-299	Dr. Ziegler
F - Feb 29	18	Membranes: Lipids; ***Quiz 2***	12, pp. 326-335	Dr. Ziegler
M - Mar 3	19	Membranes: Proteins	12, pp. 336-348	Dr. Ziegler
W - Mar 5	20	Membranes: Transport 1	13, pp. 351-376	Dr. Ziegler
Th - Mar 6		**Review/Help Session, 4:00-5:00, Chavez 111**		***Dr. Ziegler***
F - Mar 7	21	Membranes: Transport 2	13, pp. 351-376	Dr. Ziegler
M - Mar 10		***EXAM 2***		***Dr. Ziegler***
W - Mar 12	22	Signal Transduction Pathways 1	14, pp. 381-403	Dr. David Gang
F - Mar 14	23	Signal Transduction Pathways 2	(same as Lec 22)	Dr. David Gang

Mar 15-23		**Spring Break**		
M - Mar 24	24	Metabolism and Bioenergetics	15, pp. 409-430 (review 11-14 & pp. 208-211)	Dr. Miesfeld
W - Mar 26	25	Glycolysis 1: Glycolytic Pathway	11, pp. 303-308; 16, pp. 433-452	Dr. Miesfeld
F - Mar 28	26	Glycolysis 2: Regulation of Glycolysis, Fate of Glycolytic Intermediates and Products	16, pp. 452-471	Dr. Miesfeld
M - Mar 31	27	Redox Reactions, Enzyme Cofactors and Pyruvate Dehydrogenase	15, pp. 420-430; 17, pp. 477-481; 18, pp. 506-509	Dr. Miesfeld
W - Apr 2	28	Citrate Cycle	17, pp. 475-498	Dr. Miesfeld
F - Apr 4	29	Electron Transport System; ***Quiz 3***	18, pp. 502-520	Dr. Miesfeld
M - Apr 7	30	Oxidative Phosphorylation	18, pp. 520-537	Dr. Miesfeld
W - Apr 9	31	Photosynthetic Light Reactions and Photosynthetic Phosphorylation	19, pp. 541-562	Dr. Miesfeld
Th - Apr 10		**Review/Help Session, 4:00-5:00, Chavez 111**		***Dr. Miesfeld***
F - Apr 11	32	Photosynthesis: Calvin Cycle, C4 and CAM	20, pp. 565-577	Dr. Miesfeld
M - Apr 14		***EXAM 3***		***Dr. Miesfeld***
W - Apr 16	33	Carbohydrates 1: Pentose Phosphate Pathway and Gluconeogenesis	20, pp. 577-589	Dr. Miesfeld
F - Apr 18	34	Carbohydrates 2: Glycogen Metabolism	21, pp. 592-614	Dr. Miesfeld
M - Apr 21	35	Lipid Metabolism 1	22, pp. 617-634	Dr. Miesfeld
W - Apr 23	36	Lipid Metabolism 2	22, pp. 634-646	Dr. Miesfeld
F - Apr 25	37	Lipid Metabolism 3	26, pp. 739-756	Dr. Miesfeld
M - Apr 28	38	Amino Acid Metabolism 1; ***Quiz 4***	23, pp. 649-676	Dr. Miesfeld
W - Apr 30	39	Amino Acid Metabolism 2	24, pp. 679-706	Dr. Miesfeld
F - May 2	40	Metabolic Integration 1	27, pp. 760-781	Dr. Miesfeld
M - May 5	41	Metabolic Integration 2	(same as Lec 40)	Dr. Miesfeld
M - May 5		**Review/Help Session, 4:00-5:00, in reg. classroom (ILC 120)**		***Dr. Miesfeld***
W - May 7		***EXAM 4 (3:00-3:50 pm, ILC 120)***		***Dr. Miesfeld***

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