BIOLOGY 4454/5454 Spring 2010

CRN 21281/21282 **Tentative Syllabus**

MOLECULAR CELL PHYSIOLOGY AND LAB

CRN 21281/21282: M W 1:00 - 3:50 PM
257 HOH (Laboratory Annex Building)
http://www.metabolism.net/bidlack/
http://biology.uco.edu/bidlack/
http://www.whfreeman.com/lodish6e/

Dr. Jim Bidlack

301B HOH (Howell Hall - Office)
Phone: (405) 974-5927
E-mail: jbidlack@uco.edu
Office Hours: 4:00 - 5:00 PM MTWR
or by appointment

***MOLECULAR* CELL PHYSIOLOGY: A study of the molecular and physiological aspects of cell life. Topics include cell dynamics, protein structure and function, nucleic acids, recombinant DNA technology, subcellular organization, photosynthesis, respiration, integrated metabolism, transport, and differentiation. The course consists of lecture and laboratory integrated into six hours per week; length of laboratory sessions varies with weekly topics. Prerequisites: 12 hours of Biological Science (including Cell Biology) and Organic Chemistry.**

Date		Lecture / Laboratory Topic	Chapter
January			
11	M	Cell structure and function	1
13	W	Chemical foundations: general chemistry	2
18	M	Martin Luther King Jr. Day - No classes	
20	W	Biological molecules	2
25	M	**LAB 1: DNA Isolation**	
27	W	Biological molecules / protein structure and function	2,3
February			
1	M	Protein structure and function	3
3	W	Protein structure and function	3
8	M	Protein structure and function	3
10	W	**EXAM I**	
15	M	Protein synthesis: Molecular genetic mechanisms	4
17	W	**LAB 2: Protein Electrophoresis**	
22	M	Protein synthesis: Molecular genetic mechanisms	4
24	W	Biomembranes and subcellular organization	9,10
March			
1	M	Biomembranes and subcellular organization	9,10
3	W	Biomembranes and subcellular organization	9,10

Date		Lecture / Laboratory Topic	Chapter
March (continued)			
8	M	**LAB 3: Organelle Isolation and Enzymology**	
10	W	Biomembranes and subcellular organization	9,10
15	M	Spring Break	
17	W	Spring Break	
22	M	Control of gene expression	6,7
24	W	Control of gene expression	6,7
29	M	RNA processing, nuclear transport, and post-translational control	7,8
31	W	**LAB 4: Transformation and Gene Expression**	
April			
5	M	RNA processing, nuclear transport, and post-translational control	11,13,14
7	W	**EXAM II**	
12	M	Photosynthesis	12
14	W	Cellular Respiration	12
19	M	Additional metabolic pathways	12
21	W	**LAB 5: DNA Fingerprinting or PCR Analysis**	
26	M	Molecular genetic techniques and genomics	5
28	W	Molecular genetic techniques and genomics	5
May			
3-7	M-F	**FINAL EXAMINATIONS**	

CRN (21281/21282): The Final Exam (EXAM III) is scheduled for Friday, 7 May at 1:00 - 2:50 PM.

Additional course information: Students are encouraged to read the book before coming to class. Review what pages will be discussed in lecture by looking at the pictures, figures, and illustrations. Browse the information and then move on to reading the text to acquaint yourself with the learning material. PowerPoint presentations produced by the publisher as well as PowerPoint presentations developed by students during previous semesters are available at http://www.metabolism.net/bidlack/ and http://biology.uco.edu/bidlack/

BIOLOGY 4454/5454

MOLECULAR CELL PHYSIOLOGY AND LAB

Spring 2010 – CRN 21281/21282

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E-Mail: jbidlack@uco.edu

Internet http://www.metabolism.net/bidlack/ or http://biology.uco.edu/bidlack/

Office: MTWR 4:00 - 5:00 PM, 301B Howell Hall

Avoid Scheduling Office Visits Just Before Class

Textbook: **Lodish, H., A. Berk, C Kaiser, M. Krieger, M. Scott, A. Bretscher, H. Ploegh, and P. Matsudaira. 2008. Molecular Cell Biology. Sixth Edition. W.H. Freeman and Company, New York.**

Attendance: **Students are expected to attend all classes.**

Grading: **An approximate breakdown of points for the course is as follows:**

3 lecture exams @ 100 points each	**300**
5 formal lab reports @ 30 points each	**150**
1 lab preparation @ 50 points*	**50**
1 presentation @ 50 points*	**50**
TOTAL POSSIBLE POINTS	**550**

Grading scale	**Grade**	**Points needed**
90 -100% of total possible points	**A**	**495**
80 -89% of total possible points	**B**	**440**
70 -79% of total possible points	**C**	**385**
60 -69% of total possible points	**D**	**330**
Below 60% of total possible points	**F**	**-**

Exam material: **Most of the exam material will come from the course textbook, although additional questions will come from lecture and laboratory assignments. For best performance, read the assigned text before attending lecture and review your notes after each class.**

Exams: **Translation dictionaries are not permitted during the exam. Exams will consist mostly of multiple-choice, matching, true-false, short answer, and short essay questions. All exams count in determining the final grade. Make-up exams will be given only in extenuating circumstances and will usually consist of long essay questions.**

Cheating: **All work should be that of the student alone. If the instructor determines that a student has cheated on an exam or any assignment, the student will receive no credit for that exam or assignment and the student's name will be reported to the proper authorities.**

NOTE: Graduate students (BIO 5454) will be required to: 1) assist supervision of lab preparation and 2) accompany their presentation with a short report (250 word minimum and 2 references) about the topic.

For additional student information that accompanies this syllabus, go to the link on the Internet at:

http://www.uco.edu/academicaffairs/StudentInfoSheet.pdf