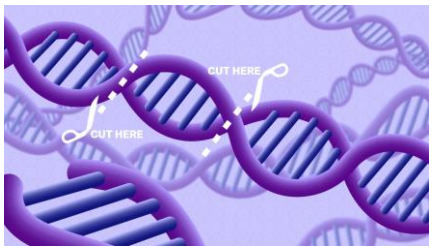

BIOLOGY 4454/5454 Fall 2022

CRN 15907/15908 **Tentative Syllabus**

MOLECULAR CELL PHYSIOLOGY AND LAB

CRN 15907/15908: M W 10:00 AM - 12:50 PM
257 HOH (Laboratory Annex Building)
http://www.metabolism.net/bidlack/
https://www3.uco.edu/centraldirectory/profiles/2120
https://achieve.macmillanlearning.com/

Textbook Course ID is: qy7nxt

Dr. Jim Bidlack

301B HOH (Howell Hall - Office)
Phone: (405) 974-5927
E-mail: jbidlack@uco.edu
Office Hours: MTWR 12:50 - 1:50 PM
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
August			
22	M	Cell structure and function	1,4
24	W	Chemical foundations: general chemistry	2
29	M	Biological molecules	2
31	W	**LAB 1: DNA Isolation**	
September			
5	M	**Happy Labor Day!**	
7	W	Biological molecules / protein structure and function	2,3
12	M	Protein structure and function	3
14	W	Protein structure and function	3
19	M	Protein structure and function	3
21	W	**EXAM I**	
26	M	Protein synthesis: Molecular genetic mechanisms	5,6
28	W	**LAB 2: Protein Electrophoresis**	
October			
3	M	Protein synthesis: Molecular genetic mechanisms	7,8,9
5	W	Biomembranes and subcellular organization	10,11
10	M	Biomembranes and subcellular organization	10,11
12	W	Biomembranes and subcellular organization	10,11

Date		Lecture / Laboratory Topic	Chapter
October (continued)			
17	M	**LAB 3: Organelle Isolation and Enzymology**	
19	W	Biomembranes and subcellular organization	10.11
24	M	Control of gene expression	7,8
26	W	Control of gene expression	7,8
31	M	RNA processing, nuclear transport, and post-translational control	8,9
November			
2	W	**LAB 4: Transformation and Gene Expression**	
7	M	RNA processing, nuclear transport, and post-translational control	8,9,11,13
9	W	**EXAM II**	
14	M	Photosynthesis	12
16	W	Cellular Respiration	12
21	M	**LAB 5: CRISPR Technology or PCR Analysis**	
23	W	**Happy Thanksgiving!**	
28	M	Additional metabolic pathways	12
30	W	Molecular genetic techniques and genomics	6,7,8
December			
5	M	Molecular genetic techniques and genomics	6,7,8
7	W	Additional exam material	
12-16		**FINAL EXAMINATIONS**	

CRN (15907/15908): The Final Exam (EXAM III) is scheduled for Friday, 16 December at 9:00 - 10:50 AM.

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/

The Central Six

At the University of Central Oklahoma, we are guided by the mission of helping students learn by providing transformative experiences so that they may become productive, creative, ethical and engaged citizens and leaders contributing to the intellectual, cultural, economic and social advancement of the communities they serve. Transformative learning is a holistic process that places students at the center of their own active and reflective learning experiences. A student's major field is central to the learning experience and is a vital part of the "Central Six." All students will be transformed with Discipline Knowledge, Leadership, Problem Solving (Research, Scholarly and Creative Activities), Service Learning and Civic Engagement, Global and Cultural Competencies, and Health and Wellness.

BIOLOGY 4454/5454

MOLECULAR CELL PHYSIOLOGY AND LAB

Fall 2022 – CRN 15907/15908

Instructor: Dr. Jim Bidlack

Office Phone: (405) 974-5927 UCO Weather Line: (405) 974-2002

E-Mail: jbidlack@uco.edu

Internet http://www.metabolism.net/bidlack/ or https://www3.uco.edu/centraldirectory/profiles/2120

Office: MTWR 12:50 – 1:50 PM, 301B Howell Hall

Avoid Scheduling Office Visits Just Before Class

Textbook: **Lodish, H., et al. 2021. Molecular Cell Biology. Ninth 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: **Exam material will come from lecture, laboratory assignments, and the course textbook. 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:

https://www.uco.edu/academic-affairs/files/aa-forms/StudentInfoSheet.pdf