

BIOL 3310 Cellular and Molecular Biology
Fall 2014 MWF 9:00A – 9:50A N322

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| Instructor | My Lo Thao, Ph.D. |
| Office/ Telephone | N276 / (209) 667-3649 |
| Office hours | MW 10:00A-11:30A or by appointment |
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| Webpage | moodle.csustan.edu/ |

Course description: Introductory analysis of the structure and function of the major components of the cell with emphasis on the molecular mechanisms involved in membrane function, signal transduction, intracellular compartments and transport, cell division and apoptosis.

Course objectives: For students to gain factual knowledge of the structure and function of the major components of the cell and understand the basic principles of molecular biology as it applies to experimental evidence that supports the current knowledge of the cell.

COURSE REQUIREMENTS

Prerequisites: C- or better in BIOL 1150 and CHEM 1110 or equivalent.

Required Text: Becker's World of the Cell, 8th Edition, Hardin *et al.*

ADD/DROP Policies: August 27th is the last day to add any course and September 18th is the census date and the last day to drop the course. The add/drop policies for BIOL 3310 are the same as the university add/drop policies.

Course Etiquette:

1. Arrive prepared and on time for class.
2. Turn off and put away all cell phones and pagers. No cell phone will be allowed out at any time. If they are taken out, they will be confiscated.
3. Please do not carry on conversations with your neighbors once class has started. Such behavior is highly disrespectful and very distracting to me and to the other students around you.

Grading Policies:

1. **Academic Dishonesty and Misconduct:** There is zero tolerance for cheating. Cheating in any capacity in this class will result in penalties ranging from a minimum of a zero on the assignment, quiz or exam, an F for the class, to a maximum of expulsion from California State University, Stanislaus as indicated by the official University Policy regarding dishonesty and misconduct. Exams, quizzes, and/or other assignments are indicators of individual performance. Copying off of another student's exam, quiz, plagiarized reports, or other assignments constitutes cheating. If your phone rings during the exam, ten (10) points will be deducted from your score. Taking out a cell phone during an exam is considered cheating, your exam will be confiscated, and you will receive a zero for that exam.
2. **Class attendance is highly recommended and vital to your success in this class.** You are expected to attend class regularly, come to class on time, and complete assigned readings. Attendance requires not only your physical presence, but your attention and participation as well. Students who are

physically present, but inattentive (including, but not limited to, sleeping, excessive conversation, texting, e-mailing, web-surfing, being disruptive, arriving late, leaving early, etc.) may be asked to leave. You are responsible for any information or assignments you missed in your absence. Quizzes you missed in your absence cannot be made up. I highly recommend reading the assigned chapters before coming to class.

3. **Unannounced quizzes.** Unannounced quizzes will be given throughout the semester to encourage students to keep up with the reading material, and discourage an unacceptable number of absences and/or students consistently showing up late for class. If you are tardy/absent and you miss the quiz, you will not be able to make it up.
4. **Make-up exams given only under extenuating circumstances and only with documentation.** Make-up exams will be different and will consist only of short answers and essay questions. Failure to appear at exam time without 24 hours prior notice to instructor with an appropriate excuse, or an appropriately documented emergency, will result in zero points for that exam.
 - a. Unless otherwise stated, exams will begin at the beginning of the scheduled class time. If you are tardy, you will not be given extra time to finish the exam.
 - b. Once exam has started, you will not be allowed to leave the room until you have finished and turned in your exam.
 - c. Questions that may appear on exams include multiple choice, matching, short answer, discussion, problem-solving and case study interpretation. You will need Scantron form # 882-E for the exams. Note that:
 - i. Only answers on the scantron will be graded, so transfer answers carefully
 - ii. Take care to erase well those answers you do not want marked
 - iii. Illegible answers in written portion will not be graded.
 - iv. Correct spelling and grammar are necessary for effective communication. Therefore, spelling and/or grammatical errors will result in loss of points on exams.
 - d. After graded exams have been returned, you have one week to review exams or dispute errors; no grades will be changes after that time.

5. **Total points for course = 550**

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| 4 exams (75 pts each) | 300 pts |
| 10 Quizzes (5 pts each) | 50 pts |
| Comprehensive final exam | 200 pts |

6. **Grading** will be based on a percent scale:

93-100 = A, 90-92 = A-, 87-89 = B+, 83-86 = B, 80-82 = B-, 77-79 = C+, 73-76 = C, 70-72 = C-, 67-69 = D+, 60-66 = D, < 60 = F

- The instructor reserves the right to reduce your grade due to excessive absences and/or tardiness.
- Grades/scores will not be sent to students via email or telephone.

***Absolutely no late assignments will be accepted.**

7. **Course Page**

Information for the course (**Lecture notes**, objectives, exam scores, syllabus, related materials, etc.) can be found on the course's Moodle page (moodle.csustan.edu). Lecture materials are **copyrighted** and are only for the personal use of students enrolled in the course. **Do not** give your username/password to anyone else. If you do **no more** material will be provided.

How to enroll in Moodle:

1. Go to the Moodle site - moodle.csustan.edu.
2. Under Course Categories, locate and click on the course you need to enroll in - Biology, then BIOL 3310: Cellular and Molecular Biology.
3. Create a Moodle account (this will be different than your CSU Stan login account). Please remember your login and password. After your account is created and confirmed you will be able to view your Moodle course site.
4. Enter the enrollment key (i.e., password) for the course. The enrollment key is: biol3310fa14.
5. Once enrolled, go to your 'Profile Settings > Edit Profile'. Make sure that the information there is accurate (e.g., your full name has been entered, your email address is correct). At the bottom of the page enter your student identification number.

Tentative Lecture Schedule: Open to Revisions

| Date | | Chapter | Subject | Pages |
|------|----|--------------------------------|--|---------|
| Aug | 22 | 1 | Introduction, A Preview of the Cell | 1-17 |
| | 25 | 1 | A Preview of the Cell | 1-17 |
| | | 2 | The chemistry of the Cell | 18-41 |
| | 27 | 2 | The chemistry of the Cell | 18-41 |
| | | 3 | The Macromolecules of the Cell | 42-75 |
| 29 | 3 | The Macromolecules of the Cell | 42-75 | |
| Sept | 1 | | Labor day, no class! | |
| | 3 | 4 | Cells and Organelles | 76-106 |
| | 5 | | Cells and Organelles (cont'd) | |
| | 8 | 5 | Bioenergetics: The Flow of Energy in the Cell | 106-128 |
| | 10 | 6 | Enzymes: The Catalysts of Life | 129-155 |
| | 12 | 7 | Membranes: Their Structure, Function, and Chemistry | 156-193 |
| | 15 | | Exam I (Chs. 1-6) | |
| | 17 | | Membranes: Their Structure, Function, and Chemistry (cont'd) | |
| | 19 | 8 | Transport Across Membranes | 194-223 |
| | 22 | | Transport Across Membranes (cont'd) | |
| | 24 | 9 | Chemotrophic Energy Metabolism: Glycolysis and fermentation | 224-251 |
| | 26 | 10 | Chemotrophic Energy Metabolism: Aerobic respiration | 252-292 |
| | 29 | | Chemotrophic Energy Metabolism: Aerobic respiration | |
| Oct | 1 | 11 | Phototrophic Energy Metabolism: Photosynthesis | 293-323 |
| | 3 | 12 | The Endomembrane System and Peroxisomes | 324-364 |
| | 6 | | The Endomembrane System and Peroxisomes | |
| | 8 | | Exam II (Chs 7-11) | |
| | 10 | | No classes! | |
| | 13 | 13 | Signal Transduction Mechanisms I | 365-391 |
| | 15 | 14 | Signal Transduction Mechanisms II | 392-421 |
| | 17 | | Signal Transduction Mechanisms II | |
| | 20 | 15 | Cytoskeletal Systems | 422-448 |

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| | 22 | | Cytoskeletal Systems | |
| | 24 | 16 | Cellular Movement | 449-476 |
| | 27 | 17 | Cell Adhesions, Junctions and Extracellular | 477-504 |
| | 29 | | Cell Adhesions, Junctions and Extracellular | |
| | 31 | 18 | The Structural Basis of Information | 505-548 |
| Nov | 3 | | Exam III (Chs 12-16) | |
| | 5 | | The Structural Basis of Information | |
| | 7 | 19 | The Cell Cycle, DNA Replication and Mitosis | 549-599 |
| | 10 | | The Cell Cycle, DNA Replication and Mitosis | |
| | 12 | | | |
| | 14 | 20 | Sexual Reproduction, Meiosis, and Genetic Recombination | 600-644 |
| | 17 | | Sexual Reproduction, Meiosis, and Genetic Recombination | |
| | 19 | 21 | Gene Expression: I. The Genetic Code and Transcription | 645-678 |
| | 21 | | Gene Expression: I. The Genetic Code and Transcription | |
| | 24 | 22 | Gene Expression: II. Protein Synthesis and Sorting | 679-708 |
| | 26 | | Exam IV (Chs 16-20) | |
| 28 | | Thanksgiving, no class | | |
| Dec | 1 | | Gene Expression: II. Protein Synthesis and Sorting | |
| | 3 | 23 | The Regulation of Gene Expression | 710-756 |
| | 5 | | The Regulation of Gene Expression | |
| | 8 | | Catch up | |
| | 10 | | Reading day, no class | |
| | 15 | | Final Exam 8:30A – 10:30A (200 pts) | |