

BIOL 3310 Molecular and Cellular Biology
Fall 2012 MWF 9:00A – 9:50A N104

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| Instructor | My Lo Thao, Ph.D. |
| Office/ Telephone | N270 / (209) 667-3649 |
| Office hours | TW 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: ZOOL 1050 and BOTY 1050, or BIOL 1150, and CHEM 1110 or equivalent.

Required Text: Becker's World of the Cell, 8th Edition, Hardin *et al.*
The Cell Place (<http://thecellplace.com>)

ADD/DROP Policies: **September 19th is the last day to add/drop the course (Census day).** 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 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, reports, and/or other assignments are indicators of individual performance. Copying off of another student's exam, 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 vital for success in this class;** missing more than 6 classes may result in being dropped from the course. You are responsible for any information or assignments you missed in your absence. I highly recommend reading the assigned chapters before coming to class.
3. **Make-up exams given only under extenuating circumstances and only with documentation.**

- a. 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.
- b. Once the exam has started, you are 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, fill in the blank, 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.

4. Total points for course = 600

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| 4 exams (75 pts each) | 300 pts |
| Online assignments | 50 pts |
| Quizzes | 50 pts |
| Comprehensive final exam | 200 pts |

Unannounced quizzes will be given throughout the semester to encourage students need to keep up with the material, and discourage an unacceptable number of absences and/or students consistently showing up late for class. Additional assignments may also be given throughout the term.

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.**

5. 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 so **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: biol3310.
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.

6. **Online homework - The Cell Place:** For each chapter, there is a set of review questions on the web site <http://www.thecellplace.com>. You are to complete these review quizzes by the listed due dates for each set. You can complete these anytime up to the due date, you will not be allowed to complete assignments that are not done on time. Your final Cell Place grade will be based on the percentage of points you have earned out of the total possible. You will then be awarded points out of a total of 50 corresponding to your percentage points earned.

Students registration: To register for a website:

1. Go to <http://www.thecellplace.com>
2. Select your textbook.
3. Click **Register**.

During registration, you establish a personal login name and password that you will use each time you access the website. When you finish registering, you receive a registration confirmation email containing your login name and password. If you already have registered for a Pearson Education product, you can use your existing login name and password, but you must register again for the new product.

To join a class:

- a. Click **Join a Class**.
- b. When you are prompted for a Class ID, enter the Class ID = cm190087 and confirm that the instructor name and class information is correct by clicking **Next**. From the Confirmation & Summary page, click **Enter Class Now** to immediately access the class.

After joining the class, you receive a class enrollment confirmation email containing your login name and password.

Note: Students who fail to correctly register for the Moodle and Thecellplace pages by August 30, 2012 will be dropped from the class.

Tentative Lecture Schedule: *Open to Revisions*

| | Date | Chapter | Subject | Pages |
|------|-------------|----------------------|--|--------------|
| Aug | 22 | 1 | Introduction, A Preview of the Cell | 1-17 |
| | 24 | 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 |
| 31 | 4 | Cells and Organelles | 76-106 | |
| Sept | 3 | | Labor day, no class! | |
| | 5 | | Cells and Organelles (cont'd) | |
| | 7 | 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 |
| | 14 | | Membranes: Their Structure, Function, and Chemistry (cont'd) | |
| | 17 | | Exam I (Chs. 1-6) | |
| | 19 | 8 | Transport Across Membranes | 194-223 |

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| | 21 | | Transport Across Membranes (cont'd) | |
| | 24 | 9 | Chemotrophic Energy Metabolism: Glycolysis and fermentation | 224-251 |
| | 26 | 10 | Chemotrophic Energy Metabolism: Aerobic respiration | 252-292 |
| | 28 | | Chemotrophic Energy Metabolism: Aerobic respiration | |
| Oct | 1 | 11 | Phototrophic Energy Metabolism: Photosynthesis | 293-323 |
| | 3 | 12 | The Endomembrae System and Peroxisomes | 324-364 |
| | 5 | | The Endomembrae System and Peroxisomes | |
| | 8 | | Exam II (Chs 7-11) | |
| | 10 | | No classes! | |
| | 12 | 13 | Signal Transduction Mechanisms I | 365-391 |
| | 15 | 14 | Signal Transduction Mechanisms II | 392-421 |
| | 17 | | Signal Transduction Mechanisms II | |
| | 19 | 15 | Cytoskeletal Systems | 422-448 |
| | 22 | | Cytoskeletal Systems | |
| | 24 | 16 | Cellular Movement | 449-476 |
| | 26 | 17 | Cell Adhesions, Junctions and Extracellular | 477-504 |
| | 29 | | Exam III (Chs 12-16) | |
| | 31 | | Cell Adhesions, Junctions and Extracellular | |
| Nov | 2 | 18 | The Structural Basis of Information | 505-548 |
| | 5 | | The Structural Basis of Information | |
| | 7 | 19 | The Cell Cycle, DNA Replication and Mitosis | 549-599 |
| | 9 | | The Cell Cycle, DNA Replication and Mitosis | |
| | 12 | | Veteran's Day, no classes! | |
| | 14 | 20 | Sexual Reproduction, Meiosis, and Genetic Recombination | 600-644 |
| | 16 | | Sexual Reproduction, Meiosis, and Genetic Recombination | |
| | 19 | | Exam IV (Chs 16-20) | |
| | 21 | 21 | Gene Expression: I. The Genetic Code and Transcription | 645-678 |
| | 23 | | Thanksgiving, no classes! | |
| | 26 | | Gene Expression: I. The Genetic Code and Transcription | |
| | 28 | 22 | Gene Expression: II. Protein Synthesis and Sorting | 679-708 |
| 30 | | Gene Expression: II. Protein Synthesis and Sorting | | |
| Dec | 3 | 23 | The Regulation of Gene Expression | 710-756 |
| | 5 | | The Regulation of Gene Expression | |
| | 7 | 24 | Cancer Cells | 758-793 |
| | 10 | | Catch up! | |
| | 14 | | Final Exam 8:30A – 10:30A (200 pts) | |