

Cellular and Molecular Biology Course Syllabus

BIOL 3310.001

Spring 2017

Instructor: Dr. Jamila Newton

Course: Basic concepts of cellular phenomena dealt with at the molecular level of organization. 3 Units

Prerequisites: *BIOL 1050, BIOL 1150, CHEM 1100, CHEM 1110, or equivalents, with C- or above.*

Textbook: Essential Cell Biology, 4th ed. Alberts, et al. ISBN: 9781317806271

Course Intentions: The fundamental unit of life is the cell; therefore cell biology forms the base upon which all modern biology and medicine is built. This course will emphasize the study of eukaryotic cell structure and function, including chemical components of cells, membrane transport, cell signaling, cellular diversity, flow of genetic information, cell growth and cell division. Experimental techniques used in understanding cell biology will be discussed along with the cellular basis of human diseases.

Course Objectives: This course is designed to introduce the principles of cell biology. At the end of this course, students should:

- Have a conceptual understanding of the molecular basis of various cellular processes.
- Be able to think critically, interpret hypothetical experimental observations based on concepts learned in class, and strengthen problem-solving skills.
- Know how cell function and structure are related, and understand the similarities and differences between various cell types.
- Hopefully develop the curiosity and desire to further incorporate their knowledge of cellular biology into their everyday lives.

Course Materials and Handouts: In addition to the textbook, computer and internet access are required for this class. For students who do not otherwise have access to a computer or the internet, computers may be available at several campus locations including the main reading room in the library. Lecture slides will be posted (pdf format) online after each class.

Pace of Course: Compared to other biology classes you may have had, Bio 3310 tends to be a fast-paced, intense course that requires good study skills, daily review of course materials, and a commitment to learning. I strongly recommend that students create daily study schedules, form a study group that meets several times a week, or meet regularly with a tutor. Attending office hours is also recommended, as students that do attend generally see an improvement in their grade.

Tests:

For exams and quizzes, you will not be allowed to leave the room once the test has started. Calculations will be simple so you will not be allowed to use a calculator. Tests will be based on any and all of the following: Lecture discussion, information on the lecture slides, textbook reading, and videos posted online. At the end of the semester, your lowest exam score (not the Final) and your two lowest quiz scores will be dropped. Everyone must take the Final Exam.

Grades: The total grade will be based out of 400 points.

Assignments	pts vary	All	100 pts
Quizzes	10 pts each	Best 10 of 12	100 pts
Exams	50 pts each	Best 3 of 4	150 pts
Final Exam	50 pts	Mandatory	50 pts
Total			400 points

A	A-	B+	B	B-	C+	C	C-	D+	D	F
> 93%	93 - 90	90 - 87	87 - 82	82 - 79	79 - 76	76 - 71	71 - 68	68 - 65	65 - 60	< 60%

Attendance, Absences, and Make-Ups:

- Daily attendance to lecture is **crucial**. Though attendance is not an official part of your grade, there will be graded, **unannounced (pop) quizzes throughout the semester**. These quizzes may be given at any time during the class.
- Unless otherwise noted, **all assignments are due by the beginning of class**. Turning in an assignment ahead of time is highly recommended.
 - Assignments will lose 10% of their grade for each day turned in late (if turned in 15 minutes after the start of class, it is considered a day late).

- If you are absent, you may email an electronic copy/clear image of the assignment before the start of class to the instructor. The email must be received in the instructor's inbox before the start of class. Remember that sending an email does not guarantee that it will be received in time, and last-minute "technical difficulties" are not a valid excuse. You will be expected to provide the original, hard copy of the assignment when you return to class.
- Athletes who will be absent due to an event are expected to take any exams and turn in any assignments **prior** to their athletic event. They are also responsible for reminding the instructor of an upcoming absence, and providing documentation of the event dates. Failure to do so in a timely fashion may result in a zero.
- **There will be no make-ups for assignments, quizzes, exams (including the final).** If you arrive late to a test (an exam or quiz), you will not be given any extra time. If you miss a test, you will receive a zero. Exceptions:
 - **Death or imminent hospitalization** of an immediate family member or dependent on the day of the test. This requires proper documentation.
 - Students who experience an **incapacitating illness or accident** on the day of the test. This requires a note from the student's physician (not a family member) or from the University Health Services. The documentation must explicitly show or state that the illness, injury, or incident occurred during the time of the class, or directly prevented the student from taking the test. The documentation must be provided within 7 days of the missed test.
 - It is not uncommon for students to experience bouts of being **emotionally overwhelmed and extremely stressed** during their college career. If these feelings become incapacitating, the student is advised to seek help from a health professional. Make-ups will be allowed if the student provides a signed note from a physician or licensed clinical therapist. The note must explicitly list date range of incapacitation (past and/or future) and detail the limitations to the student's academic activities (i.e. cannot physically attend class, is incapable of completing mentally challenging tasks, etc). Your mental health is your business, so the note should not disclose any diagnoses or confidential information.
- Make-up tests may be different versions of what was originally given in class.

Contacting the instructor:

- **For emails**, please include "Bio 3310" in the subject line. Emails can be sent to jnewton4@csustan.edu. I often only check my email twice a day during the week and sometimes not at all during the weekends. Please take this into account when expecting a reply. Not all emails will receive a response, particularly if the concern has already been or will soon be addressed.
- **Office hours** are Fridays 11 to 12:30 in N 202. Students from multiple courses may attend. Additional office hours can easily be made with Dr. Newton by appointment. Please specify if you'd like the meeting to be one-on-one, or open for other students to attend. Unless otherwise noted, please assume additional office hours will be in N 202.
- Course-specific "discussion sections" will be set up later in the semester, during which the instructor will go over a specific topic or assignment. Time and place to be announced.

Cheating: Cheating is absolutely forbidden.

- Any of the following are considered cheating:
 - **Plagiarism** is defined as using another person's words without quotation marks and/or reference. Although in preparing problem sets you may paraphrase written information from texts or articles, you must use your own words, clearly cite the source and identify the text that was paraphrased, and demonstrate that you understand that information. If you quote directly or nearly directly from a source, you must indicate this with the use quotation marks and cite the source of information.
 - **Copying** wording, answers, and materials from another source (i.e. not a product of your own work and/or not in your own wording). Thus includes assignments and tests, whether it be from current or previous classmates, or from another source altogether.
 - **Using devices, resources, or other material** that have not been explicitly allowed during tests is prohibited. Cheating includes using notes, searching the internet, or consulting resources during any test, such as an in-class exam, or an online quiz outside of class.
 - **Altering answers** on a graded problem set or exam, then trying to have the grade changed is cheating.
 - **False representation** of you as someone else in this course is a gravely serious offense. Signing in, taking quizzes, or completing any course material for another student is considered cheating.
 - **Forging or altering a grade** change form is also a gravely serious offense. The Registrar's Office is wise to this; they carefully check signatures and send copies of all grade change requests to the faculty member.
- A person cheating receives a 0 for that assignment/test; their name and a description of the offense may be sent to the Dean of Students. Cheating offenses are punished by disciplinary probation, suspension, or expulsion. These actions may be noted on your transcript!
- If you think a fellow student is cheating we urge you to discretely tell us about it. We will maintain your anonymity.

**Cell and Molecular Biology
Course Schedule, Spring 2017**

BIOL 3310.001

Tu, Th 9:35 – 10:45 a

Dr. Jamila Newton

Assignments, due dates, and additional readings will be posted online with sufficient notice. This schedule is tentative and subject to minor changes.

Date	Topic	Chp.
Unit 1		
Th Jan 26	A Brief History of Cell Biology	1
Tu Jan 31	Chemical Components of Cells	2
Th Feb 2	Energy, Catalysts, and Biosynthesis	3
Tu Feb 7	Protein Structure and Function	4
Th Feb 9	The Central Dogma	7
Tu Feb 14	Exam 1	
Unit 2		
Th Feb 16	Membrane Structure	11
Tu Feb 21	Transport Across Cell Membranes	12
Th Feb 23	Intracellular Compartments and Transport	15
Tu Feb 28	Cell Signaling	16
Th Mar 2	Cell Signaling	16
Tu Mar 7	Exam 2	
Unit 3		
Th Mar 9	Review: Energy, Catalysts, and Biosynthesis	3
Tu Mar 14	Glucose Catabolism	13
Th Mar 16	Aerobic Respiration	14
<i>Spring Break: March 20 - 24</i>		
Tu Mar 28	Photosynthesis	14
Th Mar 30	Review: Chemotropic vs Phototropic Metabolism	
Tu Apr 4	Exam 3	
Unit 4		
Th Apr 6	Cytoskeleton- Proteins	17
Tu Apr 11	Cytoskeleton- Movement	17
Th Apr 13	Cell Cycle and Cancer	18, 20
Tu Apr 18	Extracellular Structures	20
Th Apr 20	Review	
Tu Apr 25	Exam 4	
Unit 5		
Th Apr 27	Tissues and Cell-Cell Interactions	20
Tu May 2	<i>Special Topic:</i> Stem Cells and Control Gene Expression	
Th May 4	<i>Special Topic:</i> Cellular Basis of Infectious Disease	
Tu May 9	<i>Special Topic:</i> Cellular Diversity and Extremophilic Life	
Th May 11	Projects	
Tu May 16	Comprehensive Review	
Tu May 23	FINAL EXAM 8:30 – 10:30 a	