BIO 130.001 Principles of Cell & Molecular Biology
Fall 2018
MWF 12:30 – 1:45pm
Location: Ed and Gwen Cole STEM Building 103

Dr. Rebecca Parr
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Office: S112

Office Hours: S112
MW 10:00am – 12:30 noon
Or by appointment

SI Leader:
Calder Ellsworth

Text and Materials:
Pearson’s Modified Mastering with Learning Catalytics Access
Recommended: The World of the Cell, 9th Edition

Course Requirements:
Class Participation
D2L* Pre-lecture quizzes
Mastering Biology Homework
4 Major Exams

Course Description: An introductory cell biology course. Topics include the structure of the cell and cell components, both eukaryotic and prokaryotic. The processes of DNA replication and gene expression including protein processing and routing. Photosynthesis, respiration, and chemotrophy as means of energy production. The cell cycle and its regulation.

Course Content (Tentative Schedule):

<table>
<thead>
<tr>
<th>BIO 308</th>
<th>Tues</th>
<th>Wed</th>
<th>Thursday</th>
</tr>
</thead>
<tbody>
<tr>
<td>Week 1 (8/27-8/30)</td>
<td>An Introduction to Cells (1)</td>
<td></td>
<td>Chemistry of the cell (2)</td>
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<tr>
<td>Week 2 (9/3-9/5)</td>
<td>Macromolecules of the cell (3)</td>
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<td>Macromolecules of the cell (3)</td>
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<td>Week 3 (9/10-9/12)</td>
<td>Cells and Organelles (4)</td>
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<td>Week 4 (9/17-9/19)</td>
<td>Plasma Membrane (7)</td>
<td></td>
<td>Cellular Transport (8)</td>
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<td>Week 5 (9/24-9/26)</td>
<td>Test 1 (1,2,3,4,7,8)</td>
<td></td>
<td>Cell Signaling and Communication (9th edition chpt 23)</td>
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<tr>
<td>Week 6 (10/1-10/3)</td>
<td>Bioenergetics (5)</td>
<td></td>
<td>Enzymes the Catalysts of Life (6)</td>
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<tr>
<td>Week 7 (10/8-10/11)</td>
<td>Glycolysis and fermentation (9) Aerobic Respiration (10)</td>
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<td>Aerobic Respiration (10) Photosynthesis (11)</td>
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<tr>
<td>Week 8 (10/15-10/17)</td>
<td>Test 2 (5,6,9,10,11,23)</td>
<td></td>
<td>Structural basis of DNA (9th Edition Chpt 16)</td>
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<tr>
<td>Week 8 (10/22-10/24)</td>
<td>DNA Replication (9th Edition Chpt 17)</td>
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<td>DNA Repair (9th Edition Chpt 17)</td>
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Grading Policy:

- **Class Participation**: 56 pts. (9.3% grade)
- **Quiz grades**: 24 pts (4% grade)
- **Mastering Biology Homework**: 100 pts. (20% grade)
- **4 Major exams**: 400 pts. (66.7% grade)

**TOTAL COURSE POINTS**: 600 points (100% grade)

Grading Scale:

- **A** = 540 to 600 Points (90% to 100%)
- **B** = 480 to 539 Points (80% to 89%)
- **C** = 420 to 479 Points (70% to 79%)
- **D** = 360 to 419 Points (60% to 69%)
- **F** = less than 360 Points (less than 60%)

All students are required to complete a course evaluation at the end of the semester. Failure to complete this evaluation will result in a 1% deduction in your final grade for the course.

Class Participation:

Daily participation points are earned by answering and asking questions in class and completing the daily quiz.

Mastering Biology Homework:

Mastering Biology assignments will be posted upon completion of new material and will be due in one week.

Exam Policy:

- The four major exams will be held during the regular class period. They will consist of 70 questions that will be an assortment of fill-in-the-blank, multiple choice and true false questions.
- All personal belongings will be left at the front of the classroom during the exam. This includes hats, food, beverages, and cell phones.
- Students will not be allowed to leave the room for ANY REASON during the exam. If you are late for an exam, you must complete it at the assigned time.

Attendance Policy: **Attendance** will be taken daily. **Students that come into the class late or leave early will be counted absent for the entire class period.** Students will be allowed up to 6 absences (excused or unexcused). Students that exceed this maximum will no longer be eligible to make-up missed work.
Make-up Work:  **Make-up work for exams** only will only be given to students with University excused absences. Make-up exams will not be given to students that have absences in excess of 6 days (excused or unexcused). Students **must provide notification within 48 hours of their return to classes** in order to receive make-up exams. **Make-up exams will be given the week before finals** and may be in an alternative format including fill in the blank, short answer, multiple choice and matching questions. **Students are responsible for scheduling a time to take the make-up exam during** this week with Dr. Parr via email.

Academic Integrity:
Academic Integrity is a responsibility of all university faculty and students. Faculty members promote academic integrity in multiple ways including instruction on the components of academic honesty, as well as abiding by university policy on penalties for cheating and plagiarism.

**Definition of Academic Dishonesty**
Academic dishonesty includes both cheating and plagiarism. Cheating includes but is not limited to (1) using or attempting to use unauthorized materials to aid in achieving a better grade on a component of a class; (2) the falsification or invention of any information, including citations on an assigned exercise; and/or (3) helping or attempting to help another in the act of cheating or plagiarism. Plagiarism is presenting the words or ideas of another person as if they were your own. Examples of plagiarism are (1) submitting an assignment as if it were one’s own work when, in fact, it is at least partly the work of another; (2) submitting a work that has been purchased or otherwise obtained from an Internet source or another source; and (3) incorporating the words or ideas of an author into one’s paper without giving the author due credit.

Please read the complete policy at [http://www.sfasu.edu/policies/student_academic_dishonesty.pdf](http://www.sfasu.edu/policies/student_academic_dishonesty.pdf)

**ANY act of academic dishonesty will result in receiving a grade of F for the course and will be reported to the student’s dean.**

Withheld Grades Semester Grades Policy:
Ordinarily, at the discretion of the instructor of record and with the approval of the academic chair/director, a grade of WH will be assigned only if the student cannot complete the course work because of unavoidable circumstances. Students must complete the work within one calendar year from the end of the semester in which they receive a WH, or the grade automatically become an F and will be counted as a repeated course for the purpose of computing the grade point average. The circumstances precipitating the request must have occurred after the last day in which a student could withdraw from a course. Students requesting a WH must be passing the course with a minimum projected grade of C.

**Students with disabilities:**
To obtain disability related accommodations and/or auxiliary aids, students with disabilities must contact the Office of Disability Services (ODS), Human Services Building, Room 325, 468-3004/468-1004 (TDD) as early as possible in the semester. Once verified, ODS will notify the course instructor and outline the accommodation and/or auxiliary aids to be provided.

**Student Counseling Center:**
Rusk Building 3rd Floor
(936) 468-2401
Email: counseling@sfasu.edu
The Student Counseling Center is available free of charge to students and is staffed with professional therapists to meet a variety of needs. All interactions with the Student Counseling Center are guaranteed confidential. Licensed Counselors are available from 8:00a.m.-5:00p.m. Monday-Friday.
The department is closed on certain holidays, Spring Break and Winter Break when the university is closed. If you are in need of assistance after hours or on the weekend please call: University Police: (936)468-2608 or MHMR Crisis Line: (800)392-8343. If the situation is life threatening please dial 911.

Acceptable Student Behavior:
Classroom behavior should not interfere with the instructor’s ability to conduct the class or the ability of other students to learn from the instructional program (see the Student Conduct Code, policy D-34.1). Unacceptable or disruptive behavior will not be tolerated. Students who disrupt the learning environment may be asked to leave class and may be subject to judicial, academic or other penalties. This prohibition applies to all instructional forums, including electronic, classroom, labs, discussion groups, field trips, etc. The instructor shall have full discretion over what behavior is appropriate/inappropriate in the classroom. Students who do not attend class regularly or who perform poorly on class projects/exams may be referred to the Early Alert Program. This program provides students with recommendations for resources or other assistance that is available to help SFA students succeed.

The following policies will be strictly enforced:
- Students are to arrive on time and stay for the entire class period. Those who miss the daily quiz, or leave early will be counted as absent.
- Students are not to hold private side conversations
- Reading unrelated publications is not allowed.
- Use of cellular phones, for any reason, will not be tolerated.
- Students who behave in a disrespectful manner (towards the professor or classmates) will be given one warning via e-mail. Further disruptive behavior will result in the student being banned from the classroom for the remainder of the semester.

Students who exhibit unacceptable classroom behavior will be dismissed from class and counted as absent.

Student Learning Outcomes (Course Competencies):
Students who successfully complete Principles of Cell and Molecular Biology will demonstrate:
- The ability, for animal cells, to recognize and identify the function(s) of the following: centrioles, chromatin, Golgi apparatus, lysosome, microfilaments, microtubules, mitochondrion, nucleus, peroxisome, plasma membrane, rough and smooth endoplasmic reticulum, and ribosomes.
- The ability, for plant cells, to recognize and identify the function(s) of the following: cell wall, chloroplast, and central vacuole.
- An understanding of the ability of enzymes to facilitate chemical reactions. Explain how catalysts, including enzymes, affect and are affected by the chemical reactions in which they participate.
- An understanding of the biochemical processes of photosynthesis, glycolysis, citric acid cycle, and oxidative phosphorylation. Define cellular respiration and identify the cellular locations of the various stages of cellular respiration. Distinguish between the light reactions and the Calvin cycle of photosynthesis.
An understanding of how cells grow and divide. Describe the major events of each of the stages of the cell cycle (Interphase, G1, G2, S, Mitosis, Prophase, Prometaphase, Metaphase, Anaphase, Telophase, Mitotic Phase and Cytokinesis).

Explain how information flows from gene to protein. Describe the major events including transcription, translation and protein sorting. Explain the function of mRNA and tRNA. Describe how gene expression can be affected at various levels: DNA packing/unpacking and chemical modification.

Program Learning Outcomes:
Each of the student learning outcomes listed above address the Biology Department Program Learning Outcomes as follows:

#1 Demonstrate a good knowledge base in biological concepts and be able to integrate knowledge with critical thinking skills to become problem solvers. Knowledge base will include: levels of complexity (molecular/cellular through population/communities/ecosystems); biological principles and processes.

#6 Career building, demonstrate preparation for future career and educational goals utilizing the knowledge and training during their academic program by: awareness of personal competencies (strengths and weaknesses) and an understanding of professional and ethical behavior.