



BIOL 3200 – Cell Biology

Course Syllabus – Fall 2010

Individuals with disabilities who need to request accommodations should contact the Disability Services Coordinator, Administration Building room # 23, 678-466-5445, disabilityservices@mail.clayton.edu.

Course description:

Number and title: BIOL 3200 (CRN 87090), Cell Biology

Credit hours: 3.0 semester credit hours

Catalog description: An exploration of life's basic unit. Students will examine the cell from both structural and functional viewpoints. The fundamentals of cellular chemistry, life cycles, and regulation will be discussed. Seminal experiments in cell biology will be examined, and current studies in primary research journals will be addressed. Students will gain an understanding of how contemporary methods of laboratory experimentation are being used to unravel the mysteries of life's irreducible unit.

Course prerequisites: BIOL 1108, BIOL1108L, CHEM 2412, CHEM 2412L

Notebook Computer Requirement:

Each CSU student is required to have ready access throughout the semester to a notebook computer that meets faculty-approved hardware and software requirements for the student's academic program. Students will sign a statement attesting to such access. For further information on CSU's Official Notebook Computer Policy, please go to <http://itpchoice.clayton.edu/policy.htm>.

Computer Skill Prerequisites:

- **Able to use the Windows™ operating system.**
- **Able to use a the Microsoft Word™ word processing program.**

- **Able to send and receive e-mail using the Outlook™ or Outlook Express™ program.**
- **Able to use a Web browser.**

In-class Use of Student Notebook Computers:

Student notebook computers will be used extensively in this class. Various in class assignments will require students to use their computers. In addition, computers will be required to access course materials and to communicate with your instructor. Plan on bringing your laptop to class or arrange with another student prior to the meeting time of the class to share computers.

Student Learning Outcomes:

Biology outcomes:

BIOL3200 supports outcomes 1, 4, 5, and 7 of the biology major:

- **Outcome 1. Knowledge of the basic principles of major fields of biology.**
- **Outcome 4. Ability to communicate orally and in writing in a clear concise manner.**
- **Outcome 5. Ability to collect, evaluate, and interpret scientific data, and employ critical thinking skills to solve problems in biological science and supporting fields.**
- **Outcome 7. Appreciation for the impact of biological and physical science on the environment and society**

Course objectives:

- **To investigate the organelles that compose eukaryotic animal cells and understand how these organelles function individually and cumulatively to contribute to the overall function of the cell.**
- **To understand the molecular interactions that occur within cells and contribute to the overall function of the cell.**
- **To investigate cell-cell communication and cell-environment communication.**

Instructor Information:

Dr. J. Yvette Gardner

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Fall Office Hours: Monday 9:00 am – 11:00 am & 1:00 pm – 2:00 pm, Wednesday 9:00 am – 11:00 am & 1:00 pm – 2:00 pm

Class meetings: Classes will meet in room B11 from 11:00 am to 11:50 am on Monday, Wednesday, and Fridays.

Textbook information:

Required text: *The World of the Cell*, 7th Edition. Becker, Kleinsmith, Hardin, and Bertoni. Pearson/Benjamin Cummings, 2008, ISBN: 0-321-56960-1. (This textbook comes with a CD-ROM. It is recommended that you have the CD-ROM and online access as they may be incorporated into the class, including for graded assignments. No exceptions can be made for those not having access to this.)

Recommended text:

http://publications.nigms.nih.gov/insidethecell/pdf/inside_the_cell.pdf

Evaluation:

Assessments	Percentage
Exams (all 5)	70
Quizzes/Assignments	30
Total	100

Grading:

Your final grade will be determined as follows:

Grade	Percentage range
A	90-100%
B	80-89%
C	70-79%
D	60-69%
F	Below 60%

Mid-term Progress Report

The mid-term grade in this course will be issued prior to October 8, 2010, and it will be based on 2 examinations and on any assignments given. Grades are posted on Georgia

View. Based on this grade, students may choose to withdraw from the course and receive a grade of 'W'. Students pursuing this option must fill out an official withdrawal form, available in the Office of the Registrar or from the Registrar's webpage, on or before the mid-term, which occurs on Friday, October 8, 2010. If the withdrawal is submitted after October 8, 2010, the grade will be a 'WF', which is equivalent to an F in the calculation of a student's GPA.

Tentative Course Schedule

Date	Topic	Chapter
August 16	History of Cell Biology/The Chemistry of the Cell PowerPoint: Periodic Table and Bonding	1, 2
August 18	The Chemistry of the Cell PowerPoint: The Importance of Water	2
August 20	The Chemistry of the Cell PowerPoint: Selectively Permeable Membranes	2
August 23	The Chemistry of the Cell QUIZ #1: Basic Chemistry & Water	2
August 25	The Chemistry of the Cell PowerPoint: Macromolecules and Synthesis	2
August 27	The Chemistry of the Cell PowerPoint: Macromolecules and Synthesis	3
August 30	Macromolecules of the Cell QUIZ #2: Membranes &	3

	Macromolecule Synthesis PowerPoint: Proteins	
September 1 & 3	Macromolecules of the Cell Take Home Assignment: Organelles of the Cell PowerPoint: Nucleic Acids & Carbohydrates	3
September 6	NO CLASS!! Labor Day	
September 8	Macromolecules of the Cell Group Activity: Lipids	3
September 10	Organelles of the Cell QUIZ #3: Macromolecules of the Cell	4
September 13	Organelles of the Cell	4
September 15	Organelles of the Cell/Review for Exam I	4
September 17	EXAM I	
September 20	Bioenergetics: The Flow of Energy in the Cell QUIZ #3: Organelles of the Cell PowerPoint: Energy	5
September 22	Bioenergetics: The Flow of Energy in the Cell PowerPoint: Bioenergetics	5
September 24	Bioenergetics: The Flow of Energy in the Cell	5

	QUIZ #4: Bioenergetics	
September 27 & 29	Enzymes: The Catalysts of Life PowerPoint: Enzymes	6
October 1 & 4	Enzymes: The Catalysts of Life Review for Exam II Group Activity: Enzymes PowerPoint: Enzyme Kinetics	6
October 6	EXAM II	
October 8	Energy Metabolism PowerPoint: Glycolysis & Fermentation	9
October 8	LAST DAY TO WITHDRAW WITHOUT PENALTY	
October 11, 13 & 15	Energy Metabolism PowerPoint: Glycolysis & Fermentation	9
October 18, 20 & 22	Aerobic Respiration QUIZ #5: Glycolysis & Fermentation PowerPoint: Aerobic Respiration	10
October 25	Membranes I PowerPoint: Membrane Structure and Function	7
October 27	Membranes I PowerPoint: Membrane Proteins	7
October 29	EXAM III	
November 1	Membranes II	8

	QUIZ #5: Membrane Structure & Function PowerPoint: Transportation Across the Membrane	
November 3	Membranes II In-Class Assignment	8
November 5	Endomembrane System PowerPoint: ER & Golgi Trafficking	12
November 8	Endomembrane System QUIZ #6: Endomembrane System	12
November 10	The Cell Cycle, DNA Replication, and Mitosis Review for Exam IV	19
November 12	EXAM IV	19
November 15	The Cell Cycle, DNA Replication, and Mitosis QUIZ #7: Cell Cycle	19
November 19	The Cell Cycle, DNA Replication, and Mitosis	19
November 22	Sexual Reproduction, Meiosis, and Genetic Recombination QUIZ #8: DNA Replication	20
November 24-28	THANKSGIVING HOLIDAY	
November 29	Sexual Reproduction, Meiosis, and Genetic Recombination Take Home Assignment	20

	PowerPoint: Nucleic Acids	
December 1 & 3	Recombinant DNA Technology QUIZ #9: DNA Structure PowerPoint: Agarose Gel Electrophoresis, PCR & Enzyme Digestion	20
Monday, December 6th at 12:30 pm	EXAM V (Final Exam)	

This lecture schedule and lecture testing is tentative and may change. Tests may be given the week before or the week after the week listed here--or during the week predicted. Specific test dates will be announced one week in advance in class.

Making up missed work

- **There will be NO make up exams. Instead your next exam grade will count twice. Missing more than one of the scheduled, regular hour exams is considered excessive. You will be asked to withdraw from the course or to apply for a hardship withdrawal (after the midterm only) if you miss more than one exam.**
- **If you need to miss the final exam for an extraordinary circumstance, a makeup examination will be given but only if you contact me in advance of the exam. You must have a valid excuse written by some authority.**
- **You MUST present a valid excuse written by some authority (doctor or judge) in order to get an excused absence. If there is a death in your family, you will need to bring me official documentation to validate your excuse.**
- **You have 48 hours to notify me of your excuse in order to get credit for the missed assignment. If you miss a test or assignment on Tuesday, then you will have until Thursday at 12:00 PM to contact me about your excuse. If you miss a test or assignment on Thursday, then you will have until Saturday at 12:00 PM to contact me. If you do not contact me by this time, you will receive a grade of 0 regardless of your excuse. I regularly check my e-mail so if you have an excuse where you cannot return to class, then you may e-mail me your excuse and will then have to provide the documentation immediately upon your return. Otherwise, you will be given a grade of 0.**
- **Routine doctor visits (i.e., annual eye exam, cleaning of teeth, pregnancy checkups, etc.) should not be scheduled during class or exam time; they will not be considered excused.**
- **Planned traveling is not a valid excuse. If you happen to win an all expenses paid trip to some exotic destination, that MIGHT be considered an extraordinary circumstance.**

- Although I am sympathetic, getting stuck in traffic is not considered a valid excuse. You should allow plenty of time to get to class. You will be given a grade of 0 if that is your reason for not attending class. If you are in an accident on the way to school, you will need to present me with a police report within 48 hours of the accident in order to get an excused absence.
- All other extraordinary circumstances will be handled by the instructor on a case-by-case basis. However, you should contact me in advance or as soon after the extraordinary circumstance as possible.

Turning in late work/assignments: I will deduct one letter grade for each day that your assignment is late unless you have a documented excuse. No assignments will be accepted after 3 days past the due date. All assignments are due at the beginning of the class period. If you come in late and hand your assignment in late, I will deduct a letter grade. Remember, that you can miss only one assignment during the semester regardless of your excuse so choose your excuses wisely. If you do have a documented excuse, you will need to hand your official excuse in when returning to class or you will receive a grade of 0 for the assignment.

Taking exams: All exams will last 1 class period. If you should miss any portion of the exam, you will receive a zero on the missed section. All electronic devices including cell phones, palm pilots, pagers, calculators, etc. are not allowed during exams or other in class graded assignments. Possession and/or use of these items during an exam or other graded assignment will result in a zero on the graded activity. Since there is no logical reason to be using them during exams/quizzes/assignments, it will be assumed you are using them to receive aid on the exam/quiz/assignment, which is academic misconduct.

E-mail: Important messages and announcements will be sent to you via your CSU email account. You must activate your account and check your e-mail regularly. You are responsible for all e-mails sent to the class list.

General policies:

Students must abide by policies in the [Clayton State University Student Handbook](#), and the [Basic Undergraduate Student Responsibilities](#).

Visitors (friends, etc.) are strictly prohibited from attending class without the permission of the instructor. As per CSU policy, children are not allowed in classrooms (or unattended on campus).

No eating or drinking is permitted at any time in the classroom.

Students may not use laptop computers for anything other than note taking during class. Students using laptop computers for anything else (including, but not limited to, instant messaging, sending or receiving email, playing games, or surfing the internet) will be asked to leave the class.

Cell phone use during class is disrespectful and distracting to the instructor and other students. Any student using their cell phone during class (ringing, talking, or sending/receiving text messages) will have the phone confiscated and must come see me at the end of class to get it back. I may decide to answer it for you! I may read your text message to the entire class! It is suggested you switch your phone to the off position before class begins.

Behavior which disrupts the teaching–learning process during class activities will not be tolerated. While a variety of behaviors can be disruptive in a classroom setting, more serious examples include belligerent, abusive, profane, and/or threatening behavior. A student who fails to respond to reasonable faculty direction regarding classroom behavior and/or behavior while participating in classroom activities may be dismissed from class. A student who is dismissed is entitled to due process and will be afforded such rights as soon as possible following dismissal. If found in violation, a student may be administratively withdrawn and may receive a grade of WF. Please refer to <http://a-s.clayton.edu/DisruptiveClassroomBehavior.htm> for more information.

Regular and punctual attendance is highly recommended. We will be covering material in class that may not be found in the textbook. Announcements concerning changes in test dates, quiz dates, and assignment due dates will be made during class. If you must be absent due to illness or other unforeseeable event, you are still responsible for any and all information given during class. This may include changes in test dates, quiz dates, assignment due dates, and the syllabus.

No form of academic dishonesty will be tolerated in this class. Any type of activity that is considered dishonest by reasonable standards may constitute academic misconduct. The most common forms of academic misconduct are cheating and plagiarism. All instances of academic dishonesty will result in a grade of zero for the work involved. All instances of academic dishonesty will be reported to the Office of Student Life/Judicial Affairs. Judicial procedures are described at <http://adminservices.clayton.edu/judicial/>.

Changes or additions to this syllabus, including reading, exam schedule, grading, and course policies can be made at the discretion of the instructor at any time