

**BIO 130-04, Biology I, Fall 2012**

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**Bio 130: Biology I**  
**Syllabus**  
**Fall 2011**

Time: Tuesday and Thursday, 9:30 – 10:45 am

Location: FJ-B

Course Instructor: Dr. Laura Luque de Johnson, [luquedejohnson@rhodes.edu](mailto:luquedejohnson@rhodes.edu),  
phone: 843-3562, FJ 142-E

Text: Biology: Campbell and Reece (9<sup>th</sup> edition), Benjamin Cummings

Office Hours: Monday and Tuesday, 3:00 – 4:00 pm, FJ 142-E

### **Overview**

Cells are the fundamental units of life. This course will be an examination of the structure and function of life at the cellular level. Topics include the organization of prokaryotic and eukaryotic cells, the role of proteins in cell structure and metabolism, membrane structure and function, bioenergetics, interactions between a cell and its environment, and the mechanisms of heredity.

### **Expectations**

Attendance: I expect that you will attend classes on a timely manner. There will be material cover in class that will be part of the exam and not found in the textbook. **During lecture exams, you may not leave the classroom until you have finished your exam. If you leave the room, I will collect your exam at that time.**

Participation: I expect that you should be engaged in the classroom and contribute with comments and questions during lecture and class discussions.

Cell phones: please turn your cell phones off while in class. There will be absolutely no texting while in class. **No cell phones allowed during examinations.** Cell phones must be stored out of sight during all exam, quizzes, and presentations.

Sickness: please notify me (via e-mail or phone) as soon as possible of any sickness that may prevent you from attending class or taking an exam. Doctor's notice might be required.

Disabilities: accommodations will only be made to those who are registered with the office of Student Disability Services [mccowenm@rhodes.edu](mailto:mccowenm@rhodes.edu)

## Honor Code

It should go without saying that your conduct in this course must adhere in every regard to the Rhodes College Honor Code. This system is critical to maintaining the Rhodes Community, and we must all be diligent in our responsibilities. For more information on the Rhodes honor code system go to <http://www.rhodes.edu/Honor/index.cfm>.

## Attendance Policy

A record of attendance in lecture will be kept and a penalty of 1% off your attendance 5% will take in effect after your third absence. You must recognize that each absence impairs your ability to learn the material and to do well in the course. If you find you are having difficulty, your attendance record may be of relevance when you discuss your progress with your professors.

## Clickers

This course will require the use of clickers. You can rent them at the Biology Office (FJ 102W). There is a \$30.00 fee. Clickers must be returned by 5:00 pm on the first reading day after classes for a \$25 refund. If returned after that date, only \$20 will be refunded.

## Grading

Your final course grade will be based upon your performance on examinations and quizzes, as well as on detailed reports submitted after attending college-sponsored research seminars. The relative weights of these components are as follows:

Examinations	The average of your final exam grade and the three highest grades out of your four midterm exams	80%
Quizzes	The average of your 10 highest quizzes taken during the semester	10%
Seminars	Attendance at 3 seminars is expected	5%
Attendance	No more than three absences will be allowed in this course*	5%

\*After three un-excused absences, a penalty of 1% of your 5% will take in effect for every absence thereafter.

Final letter grades will be assigned according to the following scale:

Grading Scale for Biology I Lecture				
Grade	Score		Grade	Score
A	93-100		C	73-76.9
A-	90-92.9		C-	70-72.9
B+	87-89.9		D+	67-69.9
B	83-86.9		D	63-66.9
B-	80-82.9		D-	60-62.9
C+	77-79.9		F	59.9 or less

Midterm grades and evaluation for withdrawal (withdraw-passing vs. withdraw-failing) will be based upon all of your graded work up to that point.

### Examinations

There will be four midterm exams plus a comprehensive final examination at the end of the semester. In calculating your overall examination average, the lowest of your four midterm exam grades will be dropped. The final exam score will not be dropped when calculating the final course grade and you must take the final examination in order to pass the course.

Alternate exam times or make-ups for missed exams will be granted only in the most unusual of circumstances, normally limited to documented medical emergencies involving the student or a member of the student's immediate family.

### Quizzes

Quizzes will be taken via the **Moodle** course management system, which is accessible through the Rhodes home page or at <https://moodle.rhodes.edu/clogin.php>. There will be 12 quizzes and your lowest two will be dropped. Each quiz will be available for a 24-hour period starting at 7:30 AM on the respective date indicated in the lecture schedule; access is automatically closed after 24 hrs. A grade of zero will be assigned for any quiz not completed within the allowed time.

It is important to your progress in the course that your quiz grades provide accurate feedback about how well you're learning course material. Thus, **you may not use notes, books, or other forms of assistance while taking a quiz.** In addition – for practical reasons, quizzes each year include numerous questions that were asked before in preceding years. Therefore, your **obligations under the Honor System** include the following:

**When studying for quizzes you will not look at older copies that former students may have archived in violation of this rule. You also will not show copies of any quiz from this course to any other student, nor will you archive them for future students.**

No extended or alternate time will be provided to students who are unable to complete a quiz because of technical failures unless it has resulted from a system-wide problem.

Students are individually responsible for maintaining a reliable connection to the college network, for installing correct versions of software on any personal computers used for taking quizzes, and for learning how to operate efficiently within the Moodle system. The Rhodes ITS Department ([help@rhodes.edu](mailto:help@rhodes.edu); ext. 3890) will assist you with all hardware, software, and network questions.

### **Seminar Series**

Each semester several seminars will be sponsored by the Biology Department, and you are expected to attend three of these seminars as part of your class involvement. Within one week after attending the seminar, you must submit a **seminar evaluation form** to the Biology Department Assistant in FJ-102W. Late submissions will not be accepted.

You should print off the seminar evaluation form before you attend your first seminar, so you can know in advance what kind of evaluation is expected of you. When attending seminars please be on time, remain for the full presentation (including the question & answer period), and listen respectfully to the speakers. ***You are strongly encouraged to ask questions of the speakers during the question & answer period.***

### **Access to supplemental course materials**

Supplemental course materials such as lecture PowerPoint presentations, videos, etc. will be made available either via Moodle or via the college *Acad\_Dept\_Pgm* file server. The link [\\fileserv1\Acad\\_Dept\\_Pgm\Biology\Biology\Public](\\fileserv1\Acad_Dept_Pgm\Biology\Biology\Public) will connect you to the correct subfolder of the server if you are connected to the campus network – to access from off campus, contact the ITS HelpDesk ([help@rhodes.edu](mailto:help@rhodes.edu)) for instructions on establishing a connection.

Day	Date	Topic	Reading*
<b>CELL AS THE UNIT OF LIFE: STRUCTURE AND FUNCTION</b>			
Thursday	08/ 25	Characteristics of Life and the Cell	Chapter 6 sections 6.2-6.5
Weekend	08/27	Practice Quiz	Open 24 hrs starting Sat at 7:00 am
Tuesday	08/30	Water and Life	Chapter 3 sections 3.1-3.2 and Review Paper: An origin of life on Mars
Wednesday	8/31	Quiz 1	Open 24 hrs starting at 7:00 am
Thursday	09/01	Nucleic Acid structure and function	Chapter 5 section 5.5 and Chapter 16 sections 16.1, 16.3 Article: Discovery of DNA structure and Function
Tuesday	09/06	Protein structure and function	Chapter 5 Section 5.4 Article: Protein Misfolding and Degenerative Diseases
Wednesday	09/07	Quiz 2	Open 24 hrs starting at 7:00 am
Thursday	09/08	Cytoskeleton and Motility	Chapter 6 section 6.6 and Review paper: Centrosomes and cilia in human disease
Tuesday	09/13	Membrane structure and function	Chapter 7 sections 7.1-7.2 and Chapter 5 section 5.3 Article: Membrane lipids
Wednesday	09/14	Quiz 3	Open 24 hrs starting at 7:00 am
Thursday	09/15	Cellular Transport	Chapter 7 sections 7.3-7.5
Tuesday	09/20	Cell communication	Chapter 11 sections 11.1-11.5
Wednesday	09/21	Quiz 4	Open 24 hrs starting at 7:00 am
Thursday	09/22	<b>EXAM I</b>	
<b>ENERGY OF LIFE: METABOLISM</b>			
Tuesday	09/27	Introduction to Metabolism	Chapter 8 sections 8.1, 8.3,8.4 Chapter 9 section 9.1 Article: Nutrient Utilization in Humans
Wednesday	09/28	Quiz 5	Open 24 hrs starting at 7:00 am
Thursday	09/29	Glycolysis and Citric Cycle	Chapter 9 sections 9.2-9.3
Tuesday	10/04	Oxidative phosphorylation	Chapter 9 sections 9.4, 9.6
Wednesday	10/05	Quiz 6	Open 24 hrs starting at 7:00 am
Thursday	10/06	Fermentation and Anaerobic respiration	Chapter 9 section 9.5 Article: Yeast Fermentation
Tuesday	10/11	Photosynthesis and The Calvin Cycle	Chapter 10 sections 10.1-10.4 Article: Photosynthetic cells
Wednesday	10/12	Quiz 7	Open 24 hrs starting at 7:00 am
Thursday	10/13	<b>EXAM II</b>	
Tuesday	10/18	<i>No classes: Fall Recess</i>	
Wednesday	10/19	<i>No quiz: Fall Recess</i>	

<b>CELL DIVISION: THE CELL CYCLE AND FLOW OF GENETIC INFORMATION</b>			
Thursday	10/20	Cell Cycle and Mitosis	Chapter 12 section 12.1-12.3
Tuesday	10/25	DNA Replication and Repair	Chapter 16 section 16.2 Article: DNA Damage & Repair: Mechanisms for Maintaining DNA Integrity
Wednesday	10/26	Quiz 8	Open 24 hrs starting at 7:00 am
Thursday	10/27	Transcription	Chapter 17 sections 17.1-17.3
Tuesday	11/01	Translation	Chapter 17 sections 17.4-17.5 Article: Translation Matters
Wednesday	11/02	Quiz 9	Open 24 hrs starting at 7:00 am
Thursday	11/03	Regulation of gene expression	Chapter 18 sections 18.2, 18.3, 18.5
Tuesday	11/08	Cancer	Comment Paper: What are the hallmarks of cancer? Review paper: Hallmarks of Cancer_Next Generation
Wednesday	11/09	Quiz 10	Open 24 hrs starting at 7:00 am
Thursday	11/10	<b>EXAM III</b>	
<b>MECHANISMS OF HEREDITY: SEXUAL REPRODUCTION</b>			
Tuesday	11/15	Meiosis	Chapter 13 sections 13.1-13.4
Wednesday	11/16	Quiz 11	Open 24 hrs starting at 7:00 am
Thursday	11/17	Mendel and Laws of Inheritance	Chapter 14 sections 14.1-14.3 Chapter 15 section 15.1
Tuesday	11/22	Linked genes	Chapter 15 sections 15.2-15.3
Wednesday	11/23	<i>No quiz: Thanksgiving Break</i>	
Thursday	11/24	<i>No Classes : Thanksgiving Break</i>	
Tuesday	11/29	Pedigree Analysis	Chapter 14 section 14.5 Chapter 15 section 15.5 Article: Mendelian Genetics: Patterns of Inheritance and Single-Gene Disorders
Wednesday	11/30	Quiz 12	Open 24 hrs starting at 7:00 am
Thursday	12/01	<b>EXAM IV</b>	
Tuesday	12/06	Review Session	
<b>Saturday</b>	<b>12/10</b>	<b>FINAL EXAM (Cumulative)</b>	<b>5:30 pm</b>

\* **Readings** should be reviewed for general familiarity **before** the corresponding lectures and **read again in greater detail** in studying for exams.