



COURSE INFORMATION SHEET BIOLOGY 1406 – FALL 2009

Instructor:	Mrs. Danielle M. Greer	<u>Section C2</u>
Office:	Science Building Room 117 (Sci-117)	Lecture: MW 4:15-5:30 pm, Sci-225
Mailbox:	Copy Center (Bookstore Building)	Lab: MW 5:40-6:55 pm, Sci-224
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Office hours:	At TAMU, Tuesday 9:00 am-12:00 pm and 1:00-4:00 pm, Nagle Hall Room 313b At Blinn, Wednesday 10:00 am-12:00 pm and 1:00-3:00 pm in office (Sci-117)	

COURSE DESCRIPTION AND CLASS LEARNING

Course Description

Biology 1406 provides an in-depth introduction of contemporary biology for students majoring in the biological sciences. Topics emphasized include the chemical basis of life, structure and function of cells, energy transformations, and molecular biology and genetics. Prerequisite: Exemption from or passing score on the reading section of the state test or completion of READ0306 with a grade of 'C' or better. Three class hours and three laboratory hours per week. Credit: Four semester hours.

Core Course

This is a Core Course in the 42-Hour Core of Blinn College. As such, students enrolled will develop proficiency in the appropriate Intellectual Competencies, Exemplary Educational Objectives, and Perspectives. The Core Curriculum web site is www.blinn.edu/corecurriculum.

Student Learning Outcomes

Lecture:

1. Describe the process by which scientific knowledge is acquired.
2. Identify characteristics common to all cells as well as the major differences that are used to distinguish between the broadest taxonomic groups of living organisms.
3. Evaluate the role that natural selection plays in evolutionary change.
4. Describe the role organic molecules play in the structure and function of cells.
5. Discuss the major metabolic processes carried out by cells and how these processes are essential in sustaining life.
6. Distinguish between the methods by which cells divide in association with the cell cycle.
7. Demonstrate an understanding of inheritance by solving basic Mendelian genetics problems.
8. Interpret technological applications utilized in modern biology.

Laboratory:

1. Use the Scientific Method to design and carry-out an experiment.
2. Apply critical-thinking skills to the presentation and interpretation of experimental data.
3. Recognize biological concepts associated with laboratory activities.
4. Demonstrate proficiency in using the compound light microscope.

Goals for Skills Development

1. Develop strategies and skills for conceptual learning.
2. Develop strategies and skills for critical thinking (problem-solving).
3. Develop observation, listening, reading, writing and verbal communication skills.
4. Develop skills useful for team-building and cooperative learning.
5. Approach skills development and learning with objectivity, inquisitiveness, and enthusiasm.
6. Develop skills for self-assessment (evaluating progress in skills development and learning).

Required Text Book, Lab Manual, and Supplies

1. *Biology: Life on Earth* (Custom Edition for Blinn College) by Audesirk, Audesirk & Byers, Pearson Education, Inc., Upper Saddle River, NJ (taken from *Biology with Physiology: Life on Earth*, 8th edition by Audesirk, Audesirk & Byers).
2. *Biology 1406 Laboratory Manual* (Fall 2009 edition) by Richardson & others, Blinn College.
3. Pencil, journal, calculator, remote keypad (clicker), scantrons

Disability Services

Blinn College would like to help students with disabilities achieve their highest potential in college. To receive accommodations on exams or assignments, you must first provide proper documentation to our Disability Services Counselor in Science 157. Then you should identify yourself to and meet with the course instructor during posted office hours to determine the nature of accommodation you will receive in class.

Learning Center

The Learning Center provides a diversity of resources (e.g., books, calculators, computers, printers, copiers, scanners) and services (testing, proctoring, tutoring) through the Learning Center (LC), located in the Library Building Room 258 (www.blinn.edu/labs/bryan/index.htm). Drop-in tutoring for biology is available Monday-Friday (check schedule online), and scheduled group tutoring will likely occur during one or two times per week (yet to be determined). The LC is a great place for student group work and will be place where re-scheduled tests are taken.

BLINN COLLEGE AND INSTRUCTOR POLICIES

Attendance

Class attendance is essential for student success. Students at Blinn College are expected to report promptly and regularly to all classes. When a student has incurred one week of unexcused absences, the absences will be documented in BORIS, and the student will receive a letter or an emailed warning from Blinn's registrar that, upon one more week of unexcused absence, the student will be dropped from all courses in which the unexcused absences are reported.

There are 3 reasons for absence officially accepted by Blinn College: (1) observed religious holidays (the student must inform the instructor by September 21 for such a planned absence), (2) representing Blinn College at an official function (documentation required), and (3) co-enrollment with high school or other educational institution (documentation required). In this course, absences will also be excused if notification from the student for planned absence(s) is received prior to the class(es) missed or if documentation from a doctor is given to the instructor by the second class period following absence.

Each unexcused absence from lecture or lab incurs a penalty to your final grade, i.e., minus 10 points for each lecture or lab missed. If you choose to drop the course, it is your responsibility

to complete a drop order at the Office of Enrollment Services. Failure to do so may result in a course grade of 'F'. The last day to withdraw from the course and receive only a 'W' is Friday, November 20.

Academic Dishonesty

Blinn College does not tolerate cheating, plagiarism or other acts of dishonesty. These acts and procedures for dealing with them are defined under "Scholastic Dishonesty" in the Blinn College Student Handbook, copies of which are available at the administration building information desk.

Dress Code

Student attire should be appropriate for the academic environment. Please wear clothing that demonstrates respect in the classroom. Also, no hats with brims are allowed during exams.

Food and Drink

No food or drink is allowed in the classroom (lecture or lab).

Civility

Members of the Blinn College community, which includes faculty, staff and students, are expected to act honestly and responsibly in all aspects of campus life. Blinn College holds all members accountable for their actions and words. Therefore, all members should commit themselves to behave in a manner that recognizes personal respect and demonstrates concern for the personal dignity, rights, and freedoms of every member of the College community, including respect for College property and the physical and intellectual property of others.

Civility applies to attire and use of personal belongings, as well as language and behavior. Please dress appropriately for the academic classroom and laboratory. Also, please do not use electrical devices in class. That is, do not take notes on your lap-top computer, and do not text-message, talk, or take pictures with your cell phone. Turn off the sound on your cell phones.

If a student is asked to leave the classroom because of uncivil behavior, the student may not return to that class until he or she arranges a conference with the instructor; it is the student's responsibility to arrange for this conference.

CLASSROOM PERFORMANCE SYSTEM

Remote response pads (keypads or clickers) will be used in this class to provide learning and assessment opportunities. Clickers and the enrollment code for the e-Instruction Classroom Performance System (CPS) can be purchased at the Blinn College Bookstore. However, I highly recommend you purchase your enrollment code directly through e-instruction (\$ savings). Register your keypad online at www.einstruction.com. Specific information on how to register is listed below. Keypads should be brought to class everyday.

You will need:

- Class Key: (Section C2) N53923H716, or (Section C6) H53928E323
- Class name: (Section C2) Biology 1406-C2, or (Section C6) Biology 1406-C6
- Connection to the Internet
- Enrollment Code/coupon (from your *new* textbook or your school bookstore) or
- Method of Payment (credit card or personal check)

Create an CPSONline Account:

- Go to www.einstruction.com.
- Click on the Students link at the top left of the window.
- Select your school or university from the drop-down menu, then click Choose Site.
- Enter your serial number in the space provided. You can find your serial number on your LCD screen when you turn on your pad: if your pad does not have an LCD screen, your serial number is on the back of the pad, under the battery cover.
- Click Create Your Account.
- Create a CPSONline Username and Password and fill in your contact information. Click Submit to create your account.

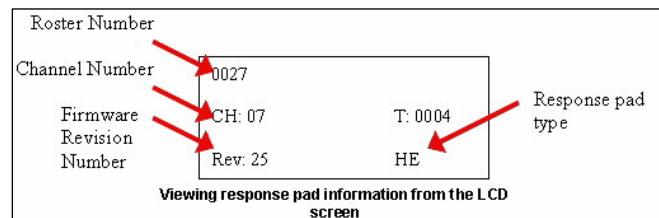
Enroll in a Class through CPSONline:

- Click Yes to enroll immediately in your class.
- Enter your Class Key in the space provided. If you have a Code, enter it in the Code box. Note that a Code is not required.
- Click Submit and choose your payment options. Click Continue.
- Fill in your billing information and click Continue.
- To join an additional CPSONline class, click the Enroll in a class button from the main menu.
- Once you have finished enrolling in all of your classes, click Log Out. *So that CPSONline properly records your information, log out of CPSONline.*

NOTE: *If you enroll in more than one class using CPS, your response pad may have a different assigned number for each class. Record your assigned response pad number after you enroll for each class, and use the reminder emails from e-Instruction to keep track of your information.*

Using CPS_{RF} in your class:

- The e-Instruction response pad is easy to use with CPS. Use the information below to learn how to use the buttons on the pad. If you have any questions, log onto www.einstruction.com and use the Customer Support menu option. Type in your name and enter the live chat room for immediate help. You can also reach Technical Support at (888) 333-7532.
- To turn the response pad on or off, press the PWR/JOIN button.
- Response pads automatically search for a class roster to join whenever you turn on the pad. To initiate your keypad to begin searching for a class roster to join, turn on the keypad and press the PWR/JOIN button.
- To manually join a class, turn on the response pad and press the PWR/JOIN button twice. 'Join' appears on the LCD screen. Type in the channel number for the class roster you would like to join, and press Send.
- To make a numeric response positive or negative, press the '+ -' button.
- To create equations, enter symbols into your response with the 'Sym' button. Symbols include: X, Y, =, (), . (decimal), + (plus operator), - (minus operator), / (division operator), * (multiplication operator), (space).
- To view the response pad channel, roster number, and firmware version, turn the pad on and press the < button.
- To view the serial number for your response pad, simply press the PWR/Join button to turn on the response pad. The serial number displays in the LCD screen as your response pad searches for a class roster to join. Your serial number will begin with "r1...".
- To adjust the LCD screen contrast, press the > button. Use the A1 button to decrease the contrast and the C3 button to increase contrast.



DESCRIPTIONS OF REQUIRED TASKS

Participation & Tickets-to-leave

Each student can earn up to one point per class period through participation. An attendance sign-in form will be passed around class each period, and contribution to discussions and class or group activities by each student will be noted by the instructor. In addition, each student should fill out a ticket-to-leave (TTL) during the lecture or lab period and turn it in when ready to leave for the day. TTLs are chances to reflect on the tasks you would like to accomplish by the next class period and on questions-of-the-day posed by the instructor. Submitted TTLs are worth one point each. About 90 points can be earned simply by attending class and submitting TTLs. Other opportunities to earn participation points include extra-curricular activities (e.g., Science Club), which will be discussed in class.

Chapter Homework

Each homework assignment comprises review questions from the textbook (Audesirk) or tasks assigned by the instructor. All homework should be written in your journal (see below) and completed by the next lecture after relevant material is covered in class. Combined, chapter homework assignments are worth 50 points or 5% of your course grade.

Lecture/Lab Journal

Throughout the semester, you should keep a journal of homework responses and significant observations from lecture and lab. Journals should be sturdy, well-bound notebooks, and journal entries should consist of such things as the date, time (or time period), class designation (lecture or lab), topics covered, descriptions of activities (participants, methods, tools), significant observations or general lessons learned, etc. Around week 6 of the semester, journals will be examined by the instructor to provide constructive assessment. They will be turned in again at the end of the semester (week 14) for a grade of up to 50 points (5% of course grade).

Pop Quizzes

During the semester, five to ten short quizzes will be given at the start of either lecture or lab and will cover subject matter from the one or two previous lectures or labs. Some quizzes will require a group (collaborative) effort. Missed quizzes cannot be made up unless the absence is excused. All together, quizzes are worth 50 points or 5% of your course grade.

Group Projects

Each student will successively contribute to five group projects during the semester. Projects relate directly with course material being covered at the time they are due. The first four projects deal with cellular structure, function and various processes and will be accomplished using non-traditional methods (creativity required!). The fifth project will consist of orally presenting the topic of biotechnology. More detail regarding these projects will be provided in class. Groups will also be formed in lab, so multiple students can share the responsibilities and problem-solving involved in lab activities. The first lab groups formed will participate in Labs 1-10; the second set of lab groups will participate in Labs 11-18.

Lecture Exams

Four exams will be given in lecture; the first three will each cover four chapters in the textbook, whereas the final is comprehensive. Exam 1 will cover Chapters 1-4 and span pages 1-79. Exam 2 will cover Chapters 5-8 and span pages 80-146. Exam 3 will cover Chapters 9-12 and span pages 147-249. The final will cover Chapters 1-13 (pages 1-273). Exams cannot be made up if class absence is unexcused. Exams combined are worth 450 points (45% of course grade).

Lab Practicals

Two lab practicals will be given; one during mid-semester and one at end of the semester. Practicals will cover lab material discussed during the previous one-half semester and cannot be made up if class absence is unexcused. In total, lab practicals are worth 200 points (20% of course grade).

GRADING

<u>Tasks</u>	<u>Points (%)</u>
Participation (max 100 pts).....	100 pts (10%)
<i>Active participation/cooperation in lecture or lab activities (1 pt/class period)</i>	
<i>Completed and submitted tickets-to-leave (1 pt/class day)</i>	
<i>Extra-curricular/community involvement (discuss w/instructor in class)</i>	
Homework.....	50 pts (5%)
Journal.....	50 pts (5%)
Quizzes.....	50 pts (5%)
Group projects (20 pts each x 5).....	100 pts (10%)
Lecture exams.....	450 pts (45%)
<i>Exams 1-3 (100 pts each, 10% each)</i>	
<i>Comprehensive Final (150 pts, 15%)</i>	
Lab practicals (100 pts each x 2).....	200 pts (20%)
Attendance.....	(minus points)
<i>10 pts subtracted from total earned for each unexcused lecture or lab absence</i>	

Total = 1,000 points

Grade Scale

A: 900-1000 points; B: 800-899 points; C: 700-799 points; D: 600-699 points; F: < 600 points

Your Grades

Tasks	Week during the semester															Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
Homework																
Journal																
Quizzes																
Group projects																
Lecture exams																
Lab practicals																
Participation																
Unexcused abs				X												

Group Projects and Lab Groups

Project 1: Group # _____ Names: _____

Project 2: Group # _____ Names: _____

Project 3: Group # _____ Names: _____

Project 4: Group # _____ Names: _____

Project 5: Group # _____ Names: _____

First Lab Group # _____ Names: _____

Second Lab Group # _____ Names: _____

TENTATIVE LECTURE AND LAB SCHEDULE

Week	Dates	Lecture Topics & Activities	**Lecture Readings	Tasks Due	Lab Topics & Activities	**Lab Readings
1	Aug 31 Sep 2	Introduction to the course Meet your instructor & classmates Introduction to Life	Chapter 1	Hw 1	Lab Safety & Pre-test; Process of Science	Lab 1; Lab 2
2	Sep 7 Sep 9	Atoms, Molecules & Life	Chapter 2	Hw 2	Scientific Method; Experimentation & Design	Lab 3; Lab 4
3	Sep 14 Sep 16	Biological Molecules; Group activity (organic molecules)	Chapter 3	Hw 3	Lecture on Chp 3; Metric Measurement	Chapter 3; Lab 5
4	Sep 21 Sep 23	Biological Molecules; Cell Structure & Function	Chapter 3; Chapter 4		Metric Measurement; Organic Molecules	Lab 5; Lab 6
5	Sep 28 Sep 30	Cell Structure & Function; Oct 2 – Exam 1 (Chp 1-4)	Chapter 4; Chapters 1-4	Hw 4	Microscopy; Scientific Illustration, Cells	Lab 7; Lab 8 & 9
6	Oct 5 Oct 7	Cell Membrane Structure & Function	Chapter 5	Hw 5	Cells; Membrane Transport	Lab 9; Lab 10
7	Oct 12 Oct 14	Energy Flow in the Life of a Cell	Chapter 6	Hw 6, Journal due	Membrane Transport; Lab Review	Lab 10; Labs 1-10
8	Oct 19 Oct 21	Capturing Solar Energy: Photosynthesis	Chapter 7	Hw 7	Oct 19 – Lab Exam 1; Spectrophotometry	Labs 1-10; Lab 11
9	Oct 26 Oct 28	Harvesting Energy: Glycolysis & Cell Respiration	Chapter 8	Hw 8	Enzyme Kinetics; Group activity (Cell Respiration)	Lab 12;
10	Nov 2 Nov 4	Nov 2 – Exam 2 (Chp 5-8); DNA: the Molecule of Heredity	Chapters 5-8; Chapter 9		Enzyme Kinetics; Chromatography & Photosynthetic Pigments	Lab 12; Lab 13
11	Nov 9 Nov 11	DNA: the Molecule of Heredity; Gene Expression & Regulation	Chapter 9; Chapter 10	Hw 9	Photosynthesis; Photosynthesis	Lab 14
12	Nov 16 Nov 18	Gene Expression & Regulation; Cellular Reproduction	Chapter 10; Chapter 11	Hw 10	DNA Isolation; RFLPs & Gel Electrophoresis	Lab 15; Lab 16
13	Nov 23 Nov 25	Cellular Reproduction; Nov 25 – No class (Holiday)	Chapter 11	Hw 11	Mitosis; Nov 25 – No lab (holiday)	Lab 17
14	Nov 30 Dec 2	Patterns of Inheritance; Dec 2 – Exam 3 (Chp 9-12)	Chapter 12; Chapters 9-12	Hw 12, Journal due	Lecture on Chp 12; Mendelian Genetics	Chapter 12; Lab 18
15	Dec 7 Dec 9	Dec 7 & 9 – Group (Project 5) presentations on Biotechnology	Chapter 13	Group project 5 due	Lab Review; Dec 9 – Lab Exam 2	Labs 11-18
16	Dec 14	Dec 14 – Comprehensive Final Exam (Sect C2: 4:15-6:55 pm; Sect C6: 7:05-9:45 pm)	Chapters 1-13			

** Lecture readings are Chapters from the textbook by Audesirk, Audesirk and Byers; lab readings are from the Blinn College lab manual for Biology 1406. Read material before it is covered in class!