

Angelina College
Science and Mathematics Division
BIOL 1408 (Internet)- General Biology I
Lecture and Lab Syllabus

- I. COURSE DESCRIPTION: BIOLOGY – BIOL 1408 – GENERAL BIOLOGY I.** Four hours credit. This course provides a survey of biological principles with an emphasis on humans, including chemistry of life, cells, structure, function, and reproduction. THIS COURSE IS NOT INTENDED FOR SCIENCE MAJORS. The laboratory portion of the course will reinforce a survey of biological principles with an emphasis on humans, including chemistry of life, cells, structure, function, and reproduction. Three lecture and two lab hours each week. Lab fee.

A. Intended Audience

Business, Human Services, Criminal Justice, Child and Family Development, and certain liberal arts and fine arts majors.

B. Instructor

Instructor: Dr. Andrea Barrett
Office: S121
Office Hours: M-R 4:00-5:00 PM and F 8:30-9:30 AM
Phone: 936-633-5262
e-mail: abarrett@angelina.edu

II. INTENDED STUDENT OUTCOMES:

A. Core Objectives Required for this Course

1. **Critical Thinking:** to include creative thinking, innovation, inquiry, and analysis, evaluation and synthesis of information
2. **Communication:** to include effective development, interpretation and expression of ideas through written, oral and visual communication
3. **Empirical and Quantitative Skills:** to include the manipulation and analysis of numerical data or observable facts resulting in informed conclusions
4. **Teamwork:** to include the ability to consider different points of view and to work effectively with others to support a shared purpose or goal

B. Course Learning Outcomes for all Sections

Upon successful completion of this course, students will:

1. Distinguish between prokaryotic, eukaryotic, plant and animal cells, and identify major cell structures.
2. Identify stages of the cell cycle, mitosis (plant and animal), and meiosis.
3. Interpret results from cell physiology experiments involving movement across membranes, enzymes, photosynthesis, and cellular respiration.
4. Apply genetic principles to predict the outcome of genetic crosses and statistically analyze results.
5. Interpret the results of karyotypes, pedigrees, and biotechnology experiments.
6. Identify parts of a DNA molecule, and describe replication, transcription, and translation.
7. Analyze evidence for evolution and natural selection.
8. Be able to apply scientific reasoning to investigate questions, and utilize scientific tools such as microscopes and laboratory equipment to collect and analyze data.
9. Use critical thinking and scientific problem-solving to make informed decisions in the laboratory.
10. Communicate effectively the results of investigations.

III. ASSESSMENT MEASURES

A. Assessments for the Core Objectives:

1. **Critical thinking** – Students will complete a project that assesses inquiry, synthesis, analysis, and results. Evidence of critical analysis will be evaluated using a standardized AC rubric.
2. **Communication** – Students will complete a project that assesses organization, quality of informational sources, and written communication skills. Communication skills and abilities will be evaluated using a standardized AC rubric.
3. **Empirical and Quantitative Skills** – Students will complete a project that assesses representation, calculation, interpretation, and application and analysis. Empirical and quantitative skills will be evaluated using a standardized AC rubric.
4. **Teamwork** – Students will complete a project that assesses effective communication with team members, team climate, contributions to a team, and responses to team members. Team members will evaluate the performance of one another. Teamwork will be evaluated using a standardized AC rubric.

B. Assessments for Course Learning Outcomes

1. Students will distinguish between prokaryotic, eukaryotic, plant and animal cells, and identify major cell structures on embedded exam questions.

2. Students will identify stages of the cell cycle, mitosis (plant and animal), and meiosis in lab activities and embedded exam questions.
3. Students will interpret results from cell physiology experiments involving movement across membranes, enzymes, photosynthesis, and cellular respiration in classroom activities and on embedded exam questions.
4. Students will apply genetic principles to predict the outcome of genetic crosses and statistically analyze results through the use of pedigrees and Punnett Squares in lab activities.
5. Students will interpret the results of karyotypes, pedigrees, and biotechnology experiments on embedded exam questions and in lab activities.
6. Students will identify parts of a DNA molecule, and describe replication, transcription, and translation on embedded exam questions.
7. Students will analyze evidence for evolution and natural selection in lab and classroom activities.
8. Students will apply scientific reasoning to investigate questions, and utilize scientific tools such as microscopes and laboratory equipment to collect and analyze data in lab activities.
9. Students will use critical thinking and scientific problem-solving to make informed decisions in the laboratory as evidenced by safe laboratory practices and on embedded exam questions.
10. Students will communicate effectively the results of investigations on assigned biological topics.

IV. INSTRUCTIONAL PROCEDURES:

This course will be taught using Blackboard. You will be given PowerPoint lectures, reading assignments, learning guides, online homework, chapter quizzes, discussion assignments, projects, and virtual laboratory experiments. You will also have two lecture exams (midterm and final) and two lab exams.

V. COURSE REQUIREMENTS AND POLICIES:

A. Required Textbooks and Recommended Readings, Materials and Equipment

1. Textbook: (Free PDF or \$55 hardcopy)
 - a. **Concepts of Biology**, OpenStax College. The textbook can be downloaded for free at <https://openstax.org/details/concepts-biology> or you may purchase a hard copy on Amazon.com or via the AC bookstore.
2. Online Homework: (\$42 online)
 - a. **Sapling Learning**. An access code can be purchased in the AC bookstore or online at <https://www.saplinglearning.com/ibiscms/login/>
 - i. Use the following course ID to enroll:
Course ID: Angelina College-BIOL1408-Spring19-Barrett
3. Virtual Laboratory: (\$59.95 online)
 - a. **Late Nite Labs**. An access code can be purchased in the AC bookstore or online at <https://labs.latenitelabs.com/signin>
 - i. Use the following information to enroll:
Section Code: 91897777
Course Name: BIOL 1408/SPRING 2019 – I01 (BARRETT)
4. Additional computer requirements and/or skills
 - a. High-speed internet connection
 - b. Blackboard access
 - c. AC email account access (I will send you emails and announcements to your AC email only)
 - d. Computer with the ability to open a PDF or Word document. (You can use Google Services, like Google Docs.)

B. Course Policies – This course conforms to the policies of Angelina College as stated in the Angelina College Handbook.

1. **Educational Accommodations** – If you have a disability (as cited in Section 504 of the Rehabilitation Act of 1973 or Title II of the Americans with Disabilities Act of 1990) that may affect your participation in this class, you may fill out the Educational Accommodations application within your AC Portal, under the “Student Services” tab. A Student Success team member will contact you once the application is received. At a post-secondary institution, you must self-identify as a person with a disability in order to receive services; for questions regarding the application process you can visit the Office of Student Success and Inclusion in the Student Center (Room 200) or email access@angelina.edu. To report any complaints related to accommodations, you should contact Annie Allen, Director of Student Success & Inclusion, in Room 200 of the Student Center. You may also contact Ms. Allen by calling (936) 633-4509 or by emailing aallen@angelina.edu. To report discrimination of any type, contact Steve Hudman, Dean of Student Affairs, at (936) 633-5292 or shudman@angelina.edu.
2. **Attendance** – Attendance is required as per Angelina College Policy. For Internet courses, attendance will be assessed by participation and completion of assignments in a timely manner. Records will be turned in to the academic dean at the end of the semester. Do not assume that non-attendance in class will always result in an instructor drop. **You must officially drop a class or risk receiving an F.** This is official Angelina College Policy. **The last day to drop the class with a “W” is April 1, 2019.** You must email the registrar’s office (registrar@angelina.edu) in order to drop the course.
3. **Additional Policies Established by the Instructor**
 - a. Students are expected to participate in the semester through courteous, relevant comments and questions. Behavior that interferes with the learning environment will not be tolerated.
 - b. Email: Students are to follow professional etiquette when sending email to their instructor. Include a subject, salutation, email body, and farewell. Be specific and to the point.

ATTENDANCE

Periodically throughout the semester, your participation in the course will be determined through discussion boards, homework, lab experiments, quizzes, projects, and exams. If you fail to participate in required assignments for the course, you will be considered in “non-attendance” and risk being dropped from the course.

MAKE-UP EXAMS

There will be **NO** make-up exams and **NO** due date extensions. Please plan accordingly.

STUDENT CONDUCT

A positive environment for learning will be maintained by students being courteous to each other and to the instructor. Cheating on assignments is not tolerated as per Angelina College policy and may result in expulsion from the course.

VI. Technical Support

A. Access to Blackboard

1. Students may log into Blackboard through:
 - a. AC webpage under My Student Tools, click the AC Blackboard link
 - b. The following link (<https://angelina.blackboard.com>)
2. Troubleshooting Blackboard
 - a. Initially contact your instructor (abarrett@angelina.edu)
 - b. Contact IT help desk (ithelpdesk@angelina.edu)

B. Access to Sapling Learning

1. Students may log into Sapling Learning through:
 - a. <https://www.saplinglearning.com/ibiscms/login/>
2. Troubleshooting Sapling Learning
 - a. Initially contact your instructor (abarrett@angelina.edu)
 - b. Contact Technical Support
 - i. <https://community.macmillan.com/community/digital-product-support>

C. Access to Late Nite Labs

1. Students may log into Late Nite Labs through:
 - a. <https://labs.latenitelabs.com/signin>
2. Troubleshooting Late Nite Labs
 - a. Initially contact your instructor (abarrett@angelina.edu)
 - b. Contact Technical Support
 - i. <https://community.macmillan.com/community/digital-product-support>

VII. **COURSE OUTLINE:** Description of the Course Activities including schedules. See Calendar for due dates.

| Module | | Assignment |
|-----------------|------------------|---|
| | Orientation Unit | Bb: Orientation Quiz |
| | | SL: Practice Assignment |
| | | Bb: Discussion 1 |
| | | LNL: Lab 1 - Introduction to Virtual Biology labs |
| Module 1 | Unit 1 | SL: Chapter 1 Homework |
| | | Bb: Chapter 1 Quiz |
| | | Bb: Project 1 |
| | | Bb: Discussion 2 |
| | | LNL: Lab 2 - Scientific Method - Mouse |
| | Unit 2 | SL: Chapter 2 Homework |
| | | Bb: Chapter 2 Quiz |
| | | LNL: Lab 3 - Biological Molecules |
| | Unit 3 | SL: Chapter 3 Homework |
| | | Bb: Chapter 3 Quiz |
| | | LNL: Lab 4 - Cell Structure and Function |
| | | LNL: Lab 5 - Osmosis and Diffusion |
| | Unit 4 | SL: Chapter 4 Homework |
| | | Bb: Chapter 4 Quiz |
| | | LNL: Lab 6 - Cellular Respiration |
| | Unit 5 | SL: Chapter 5 Homework |
| | | Bb: Chapter 5 Quiz |
| | | Bb: Project 2 |
| | | Bb: Discussion 3 |
| | | LNL: Lab 7 - Photosynthesis |
| | | Lab Exam 1 (Labs 2-7) |
| | | Midterm (chapters 1-5) |
| Module 2 | Unit 6 | SL: Chapter 6 Homework |
| | | Bb: Chapter 6 Quiz |
| | | Bb: Project 3 |
| | | LNL: Lab 8 - Mitosis and Meiosis |
| | Unit 7 | SL: Chapter 7 Homework |
| | | Bb: Chapter 7 Quiz |
| | | Bb: Discussion 4 |
| | | LNL: Lab 8 - Mitosis and Meiosis (review) |
| | Unit 8 | SL: Chapter 8 Homework |
| | | Bb: Chapter 8 Quiz |
| | | LNL: Lab 9 - Genetics of Corn |
| | Unit 9 | SL: Chapter 9 Homework |
| | | Bb: Chapter 9 Quiz |
| | | Bb: Discussion 5 |
| | Unit 10 | SL: Chapter 10 Homework |
| | | Bb: Chapter 10 Quiz |
| | | Bb: Project 4 |
| | | Bb: Discussion 6 |
| | | LNL: Lab 10 - DNA |
| | | LNL: Lab 11 - Biology PCR |
| | Unit 11 | SL: Chapter 11 Homework |
| | | Bb: Chapter 11 Quiz |
| | | LNL: Lab 12 - Evolution |
| | | |
| | | Final (chapters 6-11) |

VIII. EVALUATION AND GRADING:

The lecture portion of the course accounts for two-thirds of the course grade. The lab counts for one-third of the course grade. Lecture grades are based on two lecture exams, four projects, six discussion posts, eleven chapter quizzes, and homework assignments. Lab grades are based on two lab exams and virtual lab experiments.

Midterm Exam: There will be one midterm exam. The exam will assess your learning of Chapters 1-5 and is worth 25%.

Final Exam: There will be one final exam. The exam will assess your learning of Chapters 6-11 and is worth 25%.

Chapter Quizzes: There will be a total of eleven chapter quizzes. Collectively they will be worth 12.5%

Projects: Four projects will be given throughout the semester. Collectively they will be worth 12.5%

Discussions: Six discussion assignments will be given throughout the semester. Collectively they will be worth 12.5%

Homework Assignments: Homework assignments will be assigned on Sapling Learning. Collectively, they are worth 12.5%.

Lab Exams: There will be two non-comprehensive lab exams that will be given as shown on the schedule. Collectively they will be worth 200 points and weighted as 75% of the lab grade.

Lab Experiments: All lab experiments will be performed virtually on Late Nite Labs and a short answer assignment must be completed after every experiment by the due date. Collectively they will be averaged into 100 points and weighted as 25% of the lab grade.

SYLLABUS MODIFICATION: The instructor may modify the provisions of the syllabus to meet individual class needs by informing the class in advance as to the changes being made.