BIOL 1306/1106
Principles of Biology

Instructor: Dr. Connie Heimann
Email: Connie.Heimann@angelo.edu
Phone: 325-489-6651
Office: CAV 017
Office Hours: Virtual meetings by appointment

Learning Objectives and Nature of the Course
This course introduces the integration between structure and function of biological organization. You will be asked to use processes of science to apply principles of evolution, biological chemistry, energetics and homeostasis, cell structure and function, gene expression, and patterns of inheritance in living systems. Observation, experimentation, and investigation are emphasized. Biology 1306 requires a conceptual understanding of the material rather than the simple memorization and regurgitation of facts. This course will challenge you to analyze and apply information, solve problems, and make connections different from the context in which they were learned. These are critical skills in biology.

This course is intended for Biology majors and minors or those for which it is a degree requirement. It is not recommended for non-majors to fulfill a general education requirement for a laboratory course.

Co-requisite Courses
You must be enrolled in a section of 1106 concurrently with the 1306 lecture. Even though there are two course numbers, we consider these to be one course and you will receive the same letter grade for lecture and lab regardless of your point total in either course alone.

Required Texts and Materials

Lecture Course Materials (required):
  o Options for purchasing the Book with Connect Access Card From the ASU Bookstore or online
    ▪ Option 1 eBook with Connect – ISBN: 9781260933437
    ▪ Option 2 Loose leaf Book (You get the eBook with Connect-this option is if you want a hard copy – Connect is REQUIRED) – ISBN: 9781260933437
  o NOTE: with Option 2, if you choose to set up your Connect Access through BlackBoard you will be given the option of purchasing a loose leaf copy of the text book for an additional fee.
  • TopHat Access: Information concerning this service will be provided during the first day of classes.
  • A Digital device with wireless capability (cell phone, tablet, laptop).
    o This is an online course. You must be able to access course materials on a daily basis. A laptop is preferred – it will be very difficult to complete most online assignments without a laptop/computer and a reliable wireless source.

Lab Course Materials (required): None – all materials will be provided.
NOTE: With the exception of a lab manual requirement, these are the same books and services required for BIO 1307/1107 for fall...so those of you taking that course in the fall will be able to use the same book and services for both semesters. TopHat will be included in your technology fee starting this fall.

**Technology Requirements**

To successfully complete this course, students need to **Class Preparation Blackboard (Bb) and Connect Plus**: Much of your learning about biology must take place outside of the formal class meetings. You should be a frequent visitor to the course Blackboard site (http://blackboard.angelo.edu). Please check Bb regularly. All of the material you need to prepare for class is available from the Bb site: reading assignments for each unit, lecture presentations, homework assignments, in-class activity handouts, helpful handouts (for some concepts), and links to outside review materials (for some concepts). If you are a first time Bb user, your password is your ASU PIN (usually your 6-digit birth date unless you have changed it). You can change your password and update your personal information by adding your email address and a telephone number where you can be reached this semester. Many of the homework assignments are available through Bb and link directly to the online homework system Connect Plus.

**TopHat**: TopHat is a web based platform that allows you to answer questions in class that are projected on your personal device (cell phone, laptop, or tablet). It allows you to check on how you are learning and helps your instructor identify when the class may be doing great or struggling a bit with a concept. We use TopHat because it lets us see how students are doing with a particular concept or idea—in real time! If the class is doing great, we move on to the next subject for the day. If not, it lets us help you learn what you might be struggling with before we move on to the next activity or topic. We also will use it for quizzes in class.

**Please register by Wednesday, July 8, 2020.** By end of day on Monday, July 6, you will have received an email from your instructor with instructions for enrolling in their specific TopHat course. If you did not receive this email, please contact your instructor IMMEDIATELY to request the link to the TopHat website. Otherwise, complete the information to pay with a credit card. It is important that you sign up for your lecture instructors website or you will not be able to participate (and earn points) in class.

**Communication**

**Class Preparation ASU email**: Since class announcements will be routinely distributed via email, you will need to regularly check your ASU email account. **Please check you ASU email daily.** All course correspondence will be through your ASU email only (I will not respond to email from other accounts). Please see the email policy in Bb for more details. ASU provides Internet and email services to you at any of the computer labs on campus. Call 942-2911 to set this up if necessary.

**Lecture**: A typical class meeting will combine mini-lectures, discussions, group activities, multimedia presentations, and other demonstrations and activities to give you an opportunity to learn biological concepts in as active a manner as possible. Each segment of the course is structured around one or more conceptual units that can be interpreted or solved by applying selected biological concepts. You can accumulate up to 200 points toward your final semester grade from unannounced group or individual in-class activities (no make-ups) or homework assignments. We will also use Top Hat questions for in class activities.

As a member of the class you are also invited to:

- Ask questions, no matter how naive they seem to you. I will do my best to offer you a satisfactory answer. The only stupid question is one that isn’t asked.
- Ask for help and/or clarification. Don’t suffer in silence. I can’t help you learn if I don’t know you’re confused or if my instructions are unclear.
- Use your class mates as study partners! Review exam review questions (on Bb) or notes together. Group learning can be powerful and is often beneficial in a course like biology.
COURSE IDEA OBJECTIVES:

• Gain factual knowledge (terminology, classifications, methods, trends)
• Learn fundamental principles and theories
• Learn to apply course material (to improve thinking, problem solving, and decisions)
• Acquire skills in working with others as a member of a team

To achieve course objectives (see additional objectives on the last page of the syllabus) and help maximize your learning, it is vital that you attend class, come prepared, and study the material every day (more about this under student responsibilities).

Methods of Assessing Objectives

We use a “total points” format for determining course grades. The entire course, both lecture and lab components are worth 1000 points. Student Learning Outcomes will be assessed by exams, tutorials, lecture activities, and laboratory activities. The table below outlines the source of points for each of these components.

<table>
<thead>
<tr>
<th>Assessment</th>
<th>Maximum Point Contribution to total Grade Total Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>In-class Activities and homework</td>
<td>200 points</td>
</tr>
<tr>
<td>Exam 1</td>
<td>100 points</td>
</tr>
<tr>
<td>Exam 2</td>
<td>100 points</td>
</tr>
<tr>
<td>Exam 3</td>
<td>100 points</td>
</tr>
<tr>
<td>Final Exam</td>
<td>200 points</td>
</tr>
<tr>
<td>Laboratory*</td>
<td>300 points</td>
</tr>
<tr>
<td>Total Points Possible**</td>
<td>1000 points</td>
</tr>
</tbody>
</table>

Grading System

Course grades will be dependent upon completing course requirements and meeting the student learning outcomes.

The following grading scale is in use for this course:

A = 90.00-100 points
B = 80.00-89.99 points
C = 70.00-79.99 points
D = 60.00-69.99 points
F = 0-59.99 points (Grades are not rounded up)

Lecture Activities and Homework: A maximum of 200 points is allowed from lecture activities and homework; however, there will be opportunities to earn 230-40 of these points. Lecture Activities are NOT attendance points, but you must be present to earn them—there are no make-ups***. Note that these activities constitute 20% of your overall grade. Participation is expected. If you do not earn points on a given assignment, you will have an opportunity to earn them on another, but you are still responsible for the material covered in the assignment. Many homework assignments are online so that you can work on them at your convenience and get immediate feedback on your learning.

Exams. In this course, exams are designed to help you learn. The three exams for this course are noted on the attached schedule. You will have one 24 hour period (one entire day) to complete each exam. Exams are made up of several sections that you will have to complete in multiple periods for the day indicated. Multiple sessions will allow you to review material you miss in an earlier session and rest between sections to avoid fatigue. All parts of the exams will be timed and are expected to be the student’s own individual work. Thus, once a section is initiated it must be completed in one sitting within the given time period for that section. All the parts of an exam are part of your final grade. (All the exams together are worth 500 points or 50% of your overall grade for this course.) Completion of the entire exam must be by 11:59 pm on the evening in which the exam is due. After 11:59, the test session will close. If you are working on the exam, and computer/power issues occur, still submit the test as soon as you are able, and contact me via email on the problem you encountered for submittal. I will look at each case here individually. This course is designed to help you learn. The testing software allows me to generate a different test for each student. The chance of two students in the same room taking the same test at the same time getting
 exactly the same questions in the same order is infinitesimally small. We will be using the Respondus LockDown Browser for taking exams.

**Example exam completion timelines:**

Student Rhonda Rambelle starts taking the first section of Exam 1 at 8:00 am on the day it is made available. She earns a 23 out of 25 possible points and completes this section in 26 out of 30 minutes allowed. She immediately starts the second section, stumbles on some of the material, runs out of time and only earns 17 out of 25 points. She decides to take a break and review the material so she logs out. Three hours later, at noon, she logs in and takes the 3rd section of the exam. She does much better and scores 24 out of 25 possible points at takes 22 out of 30 minutes to complete this section. Since she has to be at work at 1:00 pm, she logs out again and goes to work. When she gets home at 7:00 pm she eats a quick dinner, and then takes section 4 of the exam, earning 22 out of 25 points and finishing this last section in 24 out of 30 minutes...well ahead of the 11:59 pm deadline for completing the entire exam. Her final score is 86 out of 100 points for this exam.

Roscoe Ram on the other hand decides to spend most of the exam day studying while playing Frisbee golf and waits until 10:00 pm to start the exam. He finishes the first section in 25 minutes and earns a 23 out of 25 points. He starts each subsequent section as soon as he completes the one before with no breaks. He scores a 18 (in 27 minutes), a 16 (in 28 minutes) and a 15 (ran out of time) on the remaining sections with a final score of 74 out of 100 also ahead of the 11:59 deadline...barely.

This format is intended to give you some flexibility in scheduling the exam. Plan your time wisely.

All exams, including the final exam are cumulative (i.e. questions on Exam 3 will include material covered on previous exams). Questions typically require interpretation of data and application of concepts rather than rote memory. While emphasis will be placed on material specifically discussed in lectures, exams also include questions covered in other assigned materials, readings and lab. Exam questions will be all objective questions (multiple choice or matching).

**Make-Up Exams:**

- No make-up Exams will be given.
- If you miss one of the first four exams, the final exam will be used to determine a substitute grade for the missed exam. For example, if exam scores are 55, 0, 64, and 105. The missed exam score will be adjusted to “make-up” the missed points. To calculate this, your score on the final exam is divided by the number of points available on the final multiplied by 100. For example, 140/200 *100=70%. 70% of 100 (the # of points available on exam 2) is 70 points which would be substituted for your score on exam 2.
- You will only be allowed to “make-up” one exam during the semester by substituting it with a percentage from your final exam. If you miss more than one exam, for any reason, you will not pass this course.
- Everyone MUST take the final exam. You WILL NOT pass this course if you miss the final exam.
- If you have taken exams 1, 2, 3, & 4, the grade on your final exam (if higher than your lowest test score) will be used to replace your lowest exam score as calculated above. You may replace only one exam score. If you have missed an exam, you do not have this option.

***What do you do if you miss a lecture activity, homework assignment, or group exam assessment?***

In the lecture portion of the course, 230-240 points for lecture activities and homework will be offered, although only 200 points will be used in calculating your grade. We use this as a way for students to accumulate points even if they have to miss a class for ANY reason. Use every opportunity early and throughout the semester to complete these activities to be sure that you will have 200 points by the end of the semester. **No last-minute offers of extra-credit are made in this course, so please don't ask.** It wouldn't be fair to your classmates that have done all the work to earn their grade. Pay your premiums - use the extra-credit opportunities early in the semester!

All grades will be calculated in the same way, regardless of extenuating circumstances or any reason not related to your actual performance in the course. However much I may sympathize with your personal circumstances, I never consider them to be a basis for grade assignments. The activity and homework points serve as an extremely generous, built-in curve. I strongly encourage you to take advantage of them when they become available because once assigned they cannot be made up. Therefore you should always attend class and strive to do your best, so
that **you** may **earn** the grade you want. It is your responsibility to keep up with your point total. **Don’t worry I will help you, if you just ask!**

*Laboratory:* This portion of the course offers you the opportunity to explore and apply concepts to answer research questions. Success in the laboratory involves teamwork in designing and conducting experiments, performing pre-lab and lab activities and report writing. In addition, you will conduct activities designed to develop and improve critical thinking and problem-solving skills related to the topics discussed in lectures. Even though BIOL 1306 and 1106 are different courses, you only get one grade for the combined points for each course (see table above). Your course grade in 1306 will be the letter grade reported for both courses on your transcript. **You must earn a minimum of 60% of the lab points (180 out of 300) to pass the course!! You WILL NOT pass the class if you fail the lab!!**

**Student Responsibilities**

**Attendance:** You are expected to attend all scheduled class meetings. You are expected to arrive on time and stay for the entire period. Missed lecture activity points CANNOT be made up. Attendance will be checked at each class meeting via the Top Hat system at random. Please inform me well ahead of time if you will need to be absent for any reason including religious holidays. **NOTE:** You are NOT automatically dropped if you stop attending class. **March 26** is the last day to drop a course.

**General Policies Related to This Course**
All students are required to follow the policies and procedures presented in these documents:

- [Angelo State University Student Handbook](#)
- [Angelo State University Catalog](#)

**Academic Integrity**

Students are expected to maintain complete honesty and integrity in all work. Any student found guilty of any form of dishonesty in academic work is subject of disciplinary action and possible expulsion from ASU.

The College of Science and Engineering adheres to the university’s [Statement of Academic Integrity](#).

**Accommodations for Students with Disabilities**

ASU is committed to the principle that no qualified individual with a disability shall, on the basis of disability, be excluded from participation in or be denied the benefits of the services, programs or activities of the university, or be subjected to discrimination by the university, as provided by the Americans with Disabilities Act of 1990 (ADA), the Americans with Disabilities Act Amendments of 2008 (ADAAA) and subsequent legislation.

Student Disability Services is located in the Office of Student Affairs, and is the designated campus department charged with the responsibility of reviewing and authorizing requests for reasonable accommodations based on a disability. It is the student’s responsibility to initiate such a request by contacting an employee of the Office of Student Affairs, in the Houston Harte University Center, Room 112, or contacting the department via email at [ADA@angelo.edu](mailto:ADA@angelo.edu). For more information about the application process and requirements, visit the [Student Disability Services website](#). The employee charged with the responsibility of reviewing and authorizing accommodation requests is:

Dallas Swafford  
Director of Student Disability Services  
Office of Student Affairs  
325-942-2047  
dallas.swafford@angelo.edu  
Houston Harte University Center, Room 112
Incomplete Grade Policy
It is policy that incomplete grades be reserved for student illness or personal misfortune. Please contact faculty if you have serious illness or a personal misfortune that would keep you from completing course work. Documentation may be required. See ASU Operating Policy 10.11 Grading Procedures for more information.

Plagiarism
Plagiarism is a serious topic covered in ASU’s Academic Integrity policy in the Student Handbook. Plagiarism is the action or practice of taking someone else’s work, idea, etc., and passing it off as one’s own. Plagiarism is literary theft.

In your discussions and/or your papers, it is unacceptable to copy word-for-word without quotation marks and the source of the quotation. It is expected that you will summarize or paraphrase ideas giving appropriate credit to the source both in the body of your paper and the reference list.

Papers are subject to be evaluated for originality. Resources to help you understand this policy better are available at the ASU Writing Center.

Student Absence for Observance of Religious Holy Days
A student who intends to observe a religious holy day should make that intention known in writing to the instructor prior to the absence. See ASU Operating Policy 10.19 Student Absence for Observance of Religious Holy Day for more information.

Title IX at Angelo State University
The University prohibits discrimination based on sex, which includes pregnancy, sexual orientation, gender identity, and other types of Sexual Misconduct. Sexual Misconduct is a broad term encompassing all forms of gender-based harassment or discrimination including: sexual assault, sex-based discrimination, sexual exploitation, sexual harassment, public indecency, interpersonal violence (domestic violence and/or dating violence), and stalking. As a faculty member, I am a Responsible Employee meaning that I am obligated by law and ASU policy to report any allegations I am notified of to the Office of Title IX Compliance.

Students are encouraged to report any incidents of sexual misconduct directly to ASU’s Office of Title IX Compliance and the Director of Title IX Compliance/Title IX Coordinator at:

Michelle Boone, J.D.
Director of Title IX Compliance/Title IX Coordinator
Mayer Administration Building, Room 210
325-942-2022
michelle.boone@angelo.edu

You may also file a report online 24/7 at www.angelo.edu/incident-form.

If you are wishing to speak to someone about an incident in confidence you may contact the University Health Clinic and Counseling Center at 325-942-2173 or the ASU Crisis Helpline at 325-486-6345.

For more information about Title IX in general you may visit www.angelo.edu/title-ix.

A successful student in Principles of Biology should be able to achieve the following course and state core related learning outcomes:

- describe, explain, and predict natural phenomena using the scientific method= CT1, EQS1, EQS2 – Assessment = In class activities, lecture exams, embedded test questions, lab quizzes, and lab activities/reports
- design an experiment and complete a written description of their design, collaboratively conduct the experiment and analyze data generated to answer some component of a given causal question and defend the reasoning for conclusions drawn in the form of a laboratory report. CS1 – Assessment = In class activities, lab quizzes, and lab activities/reports
• collect and analyze data to evaluate relevant biological/ecological scenarios/problems (i.e. apply information you have learned). EQS1 – Assessment = In class activities, lecture exams, embedded test questions, lab quizzes, and lab activities/reports
• work effectively with others to support and accomplish a shared goal = CS1, TW2 – Assessment = In class activities, lecture exams, embedded test questions, lab practical exams, and lab activities/reports
• connect what she/he is learning to her/his own field (i.e. to make biology relevant to your own academic endeavors). Assessment = In class activities, lecture exams, embedded test questions, lab practical exams, and lab activities/reports

For State, and Accreditation purposes this course will assess your ability to:
• CT1: Gather, analyze, evaluate, and synthesize information relevant to a question or issue
• CS1: Develop, interpret, and express ideas through effective written communication.
• EQS1: Manipulate and analyze numerical data and arrive at an informed conclusion.
• EQS2: Manipulate and analyze observable facts and arrive at an informed conclusion.
• TW2: Work effectively with others to support and accomplish a shared goal.
**Course Schedule**

<table>
<thead>
<tr>
<th>Week/Date</th>
<th>Class Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 January 13-17</td>
<td><strong>What is Science?</strong> Chemistry of life. <strong>What are the 4 types of biological molecules?</strong> Why is water essential to life?</td>
</tr>
</tbody>
</table>
NOTE: Class will not meet MONDAY January 20 due to the MLK holiday |
| 3 January 27-31 | Introduction to cell communication. How is information transmitted along with a nerve cell? How do cells communicate with each other? How do substances move between cells? |
| 4 February 3-7  | Wrap up and review. Exam 1 Friday for MWF classes, Thursday for TR classes.                                                                                                                                         |
| 5 February 10-14| **Enzymes:** What are enzymes? Why are they necessary to living organisms?                                                                                                                                        |
| 6 February 17-21| Energy Transformations – How Cells Release Energy: Why EXACTLY do we need oxygen? How do cells use energy in food to make ATP?                                                                                       |
| 7 February 24-28| How do cells harvest energy: What is light? Why is it necessary to make glucose?                                                                                                                                  |
| 8 March 2-6     | Wrap up and review. Exam 2 Friday for MWF classes, Thursday for TR classes.                                                                                                                                       |
| March 9-13      | SPRING BREAK                                                                                                                                                                                                      |
| 9 March 16-20   | DNA Structure, Gene Function: How do cells use their genetic information? How do cells know what genetic information to use?                                                                                        |
| 10 March 23-27  | DNA Replication, Cell Cycle, Mitosis: Why do cells replicate? How do they replicate?  
NOTE: March 26 Last Day to Drop a Class for the regular Spring 2020 semester.                                                                                                                                   |
| 11 March 30-April 3 | Sexual Reproduction, Meiosis                                                                                                                                                                                      |
| 12 April 6-9    | How is genetic information passed down from one generation - Mendelian inheritance  
NOTE: Class will not meet FRIDAY April 10 due to the spring holiday                                                                                                                                         |
| 13 April 13-17  | Wrap up and review. Exam 3 Friday for MWF classes, Thursday for TR classes.                                                                                                                                       |
| 14 April 20-24  | Biotechnology                                                                                                                                                                                                     |
| 15 April 27-May 1 | Wrap up and review for Final Exam                                                                                                                                                                                  |
| 16 May 4-6      | **FINAL EXAMS WEEK:** Final Exams will be held in your usual classroom on the following dates:  
Monday May 4  
8:00 am – Section 010  
10:30 am – Section 030  
Tuesday May 5  
8:00 am – Section 040  
10:30 am – Section 060  
Wednesday May 6  
8:00 am – Section 020  
Thursday May 7  
8:00 am – Section 050  
10:30 am – Section 070  

1 [https://www.angelo.edu/student-handbook/](https://www.angelo.edu/student-handbook/)  
2 [https://www.angelo.edu/catalogs/](https://www.angelo.edu/catalogs/)  
3 [https://www.angelo.edu/student-handbook/community-policies/academic-integrity.php](https://www.angelo.edu/student-handbook/community-policies/academic-integrity.php)