BIOL 3411
General Microbiology

Instructor: Dr. Emerson Crabill
Email: ecrabill@angelo.edu
Phone: 325-486-6642
Office: CAV 003C

Lecture: TR 12:30 - 1:45 PM CAV 100
Lab: Tuesday or Thursday 2:00 – 4:50 PM or 5:00 – 7:50 PM CAV 005 (attend the section in which you are enrolled)

Office Hours: M: 2-4 PM, T/R: 11-noon, W/F 1:00-3:00 PM

Course Information

Course Description

The major areas in the field of microbiology are surveyed, with special emphasis given to the bacteria. Groups of microorganisms are characterized in sufficient detail to reveal their nature. Fundamental concepts of biology and basic biological processes common to all forms of life are emphasized. Laboratory methods are stressed, and detailed studies are made of pure cultures.

Student Learning Outcomes

Upon completion of this course, students will be able to:
1. Isolate, maintain using aseptic technique, and laboratory test unknown bacteria
2. Evaluate the data to identify the bacteria
3. Communicate the results in a scientifically appropriate written form.
4. Have a general understanding of microorganisms and their role in our world
5. Recognize and be able to communicate using microbiologically specific terminology
6. Understand the impact microorganisms have on human life
Course Delivery
This course has a lecture component as well as a laboratory component. In lecture students will take notes and interact verbally with the professor. In the laboratory potion of the course the students will do hands on research in the microbiology lab.

Required Texts and Materials
*Brock Biology of Microorganisms.* Madigan et al. Pearson Publishing

Communication
Students can communicate with the instructor face to face during office hours or by appointment. E-mails (preferred) and phone calls will be responded to in a timely manner (typically within 24 hours), but do not expect an immediate response. Due to the pandemic, you may also schedule to meet with me remotely via Blackboard communicate or similar service.

Grading

Evaluation and Grades
Course grades will be determined as indicated in the table below.

<table>
<thead>
<tr>
<th>Assessment</th>
<th>Points</th>
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</thead>
<tbody>
<tr>
<td>Exam I</td>
<td>100</td>
</tr>
<tr>
<td>Exam II</td>
<td>100</td>
</tr>
<tr>
<td>Exam III</td>
<td>100</td>
</tr>
<tr>
<td>Exam IV</td>
<td>100</td>
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<tr>
<td>Top Hat Participation</td>
<td>60</td>
</tr>
<tr>
<td>Lab Quizzes</td>
<td>70</td>
</tr>
<tr>
<td>Lab Reports</td>
<td>70</td>
</tr>
<tr>
<td>Unknown Bacterium Lab Paper</td>
<td>100</td>
</tr>
<tr>
<td>Total</td>
<td>700 points</td>
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</tbody>
</table>

Grading System
The following grading scale is in use for this course:

- A = 630-500 points
- B = 560-629 points
- C = 490-559 points
- D = 420-489 points
- F = 0-419 points (Grades are not rounded up)
Assignment and Activity Descriptions
Exams I, II, and III will be given during the normal lecture time in the normal classroom. Exam IV, while not cumulative, will be given during the final exam scheduled time. Quizzes will be taken at the beginning of the laboratory section. Lab reports for each week will be due the following week in lab. The seven highest quiz and 8 lab report scores (each worth 10 points) will be kept, lower scores will be dropped. There is a paper for the identification of an unknown bacterium worth 100 points. More details for this paper will be given later in the semester. There will be tophat questions associated with lectures. In case you need to miss class, those points will remain available after the lectures.

Technology Requirements
Blackboard and Top Hat.

Class notes, grades, and announcements will be posted on Blackboard.

Top Hat
We will be using Top Hat Pro (www.tophat.com) for class participation. You will be able to submit answers to in-class questions using Apple or Android smartphones and tablets, laptops, or through text message. You can visit the Top Hat Overview (https://success.tophat.com/s/article/Student-Getting-Started-with-Top-Hat) within the Top Hat Success Center which outlines how you will register for a Top Hat account, as well as provides a brief overview to get you up and running on the system.

An invitation will be sent to you by email. If you do not receive this email, you can register by simply visiting our course website: Unique Course URL
Note: our course Join Code is XXXXXX

Top Hat Pro may require a paid subscription, and a full breakdown of all subscription options available can be found here: www.tophat.com/pricing.

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†
**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 to disciplinary action and possible expulsion from ASU.

The College of Science and Engineering adheres to the university’s [Statement of Academic Integrity](#).³

**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. For more information about the application process and requirements, visit the [Student Disability Services website].⁴ 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

**Plagiarism**

Plagiarism is a serious topic covered in ASU’s [Academic Integrity policy]⁵ 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.\(^6\)

**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\(^7\) for more information.

**Title IX Statement**
Angelo State University is committed to the safety and security of all students. If you or someone you know experience sexual harassment, sexual assault, domestic or dating violence, stalking, or discrimination, you may contact ASU’s Title IX Coordinator:

Michelle Boone  
Director of Title IX Compliance  
Office of Student Affairs  
325-486-6357  
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.

**Required Use of Masks/Facial Coverings by Students in Class At Angelo State University**

As a member of the Texas Tech University System, Angelo State University has adopted the mandatory *Facial Covering Policy* to ensure a safe and healthy classroom experience. Current research on the COVID-19 virus suggests there is a significant reduction in the potential for transmission of the virus from person to person by wearing a mask/facial covering that covers the nose and mouth areas. Therefore, in compliance with the university policy students in this class are required to wear a mask/facial covering before,
during, and after class. Faculty members may also ask you to display your daily screening badge as a prerequisite to enter the classroom. You are also asked to maintain safe distancing practices to the best of your ability. For the safety of everyone, any student not appropriately wearing a mask/facial covering will be asked to leave the classroom immediately. The student will be responsible to make up any missed class content or work. Continued non-compliance with the Texas Tech University System Policy may result in disciplinary action through the Office of Student Conduct.

### Course Schedule

<table>
<thead>
<tr>
<th>Date</th>
<th>Lecture Topic</th>
<th>Lab Topic</th>
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</thead>
<tbody>
<tr>
<td>Aug 18 &amp; 20</td>
<td>Intro &amp; Cell Structure and Function</td>
<td>Aseptic Technique</td>
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<tr>
<td>Aug 25 &amp; 27</td>
<td>Motility and Metabolism</td>
<td>Microscopy and Staining</td>
</tr>
<tr>
<td>Sep 1 &amp; Sep 3</td>
<td>Genetic Elements, DNA Replication, and Transcription</td>
<td>Staining</td>
</tr>
<tr>
<td>Sep 8 &amp; 10</td>
<td>Translation&lt;br&gt;<strong>Exam I - Sep 10th</strong></td>
<td>Cultivation of Microorganisms</td>
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<tr>
<td>Sep 15 &amp; 17</td>
<td>Signal Transduction and Regulatory Systems</td>
<td>Survey of Microorganisms</td>
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<tr>
<td>Sep 22 &amp; 24</td>
<td>Microbial growth and Protein Processing</td>
<td>Control of Growth</td>
</tr>
<tr>
<td>Sep 29 &amp; Oct 1</td>
<td>Aquatic Environments and Microbial Ecosystems</td>
<td>Food Microbiology</td>
</tr>
<tr>
<td>Oct 6 &amp; 8</td>
<td><strong>Exam II – Oct 6</strong>&lt;br&gt;Taking the measure of Microbial Systems</td>
<td>Biotechnology</td>
</tr>
<tr>
<td>Oct 13 &amp; 15</td>
<td>Bacterial Diversity</td>
<td>Bacterial Genetics</td>
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<tr>
<td>Oct 20 &amp; 22</td>
<td>Molecular Phylogeny</td>
<td>Identification of Unknown</td>
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<tr>
<td>Oct 27 &amp; 29</td>
<td>Evolution and Systematics&lt;br&gt;<strong>Exam III – Oct 29</strong></td>
<td>Identification of Unknown</td>
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<tr>
<td>Nov 2 &amp; 5</td>
<td>Gene Transfer</td>
<td>Identification of Unknown</td>
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<tr>
<td>Nov 10 &amp; 13</td>
<td>Mutation, Genomes and Genetics, Biology or Replication</td>
<td>Identification of Unknown</td>
</tr>
<tr>
<td>Nov 17 &amp; 19</td>
<td>Microbial Infection and Pathogenesis and Symbioses</td>
<td>Paper Due</td>
</tr>
<tr>
<td>Tues Nov 24</td>
<td><strong>Exam IV 10:30 AM</strong></td>
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</tbody>
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Modifications to the Syllabus
This syllabus, including grade evaluation and course schedule, is subject to modification. In particular, the COVID-19 pandemic may require significant changes in course delivery and content on potentially short notice.

1 https://www.angelo.edu/student-handbook/
2 https://www.angelo.edu/catalogs/
3 https://www.angelo.edu/student-handbook/community-policies/academic-integrity.php
4 https://www.angelo.edu/services/disability-services/
5 https://www.angelo.edu/student-handbook/community-policies/academic-integrity.php
6 https://www.angelo.edu/dept/writing_center/academic_honesty.php
7 https://www.angelo.edu/content/files/14206-op-1019-student-absence-for-observance-of