

# BIOL 3411

## General Microbiology

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**Office Hours: Between lecture and lab or by appointment**

## 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.

### Prerequisite and Co-requisite Courses

8 hours of introductory biology. See course catalog for list of courses that qualify.

### Prerequisite Skills

Accessing Internet websites, including Blackboard and Tophat, and proficiency with Microsoft Word and/or PowerPoint are all expectations of this course.

### 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 is a face-to-face course with online components that students are expected to access in Blackboard.

## Required Texts and Materials

Textbook for Lecture:

Brock Biology of Microorganisms, 16<sup>th</sup> edition. Madigan et al., Pearson. 2021.

Lab Notebook:

Benson's Microbiological Applications, 15<sup>th</sup> edition. Brown et al., McGraw-Hill. 2022.

## Technology Requirements

To successfully complete this course, students need to have access to a computer connected to the internet. This course will require the use of free, publically available online databases for bioinformatics.

Students need to purchase access to Top Hat. Lectures and daily assignments will be done through Top Hat. All lecture notes and Exams will be done through Blackboard.

### Top Hat

*We will be using **Top Hat Pro** ([www.tophat.com](http://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.*

*You can register by simply visiting our course website:*

*Note: our course Join Code is 402484*

*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](http://www.tophat.com/pricing)*

## Communication

Faculty will respond to email and/or telephone messages within 24 hours during working hours Monday through Friday. Weekend messages may not be returned until Monday.

**Written communication via email:** All private communication will be done exclusively through your ASU email address. Check frequently for announcements and policy changes. In your emails to faculty, include the course name and section number in your subject line.

**Virtual communication:** Office hours and/or advising may be done with the assistance of the telephone, Collaborate, Skype, etc.

## Grading

### Evaluation and Grades

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

<b>Assessment</b>	<b>Percent of Total Grade</b>
Exam I	100
Exam II	100
Exam III	100
Exam IV	100
TopHat Questions/Participation	100
Lab Quizzes	100
Lab Reports	100
Unknown Bacterium Lab Paper	100
<b>Total</b>	<b>800</b>

### Grading System

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

This course uses the following grading scale:

A = 720.00-800 points

B = 640.00-719.99 points

C = 560.00-639.99 points

D = 480.00-559.99 points

F = 0-479.99 points (Grades are not rounded up)

## Assignment and Activity Descriptions

Exams will be given during the normal lecture time in the normal classroom. The exams are not explicitly cumulative, but because of the nature of science, you may need information from previous sections to answer exam questions. Quizzes will be taken at the beginning of the laboratory section and will cover the previous lab and are worth 10 points each. Lab reports for each lab will be due at the beginning of the following lab worth 10 points each. 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 top hat questions associated with lectures worth 100 points.

## 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](#)<sup>1</sup>
- [Angelo State University Catalog](#)<sup>2</sup>

## 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](#).<sup>3</sup>

## 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](#).<sup>4</sup> 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](mailto: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](#)<sup>5</sup> for more information.

## **Plagiarism**

Plagiarism is a serious topic covered in ASU's [Academic Integrity policy](#)<sup>6</sup> 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](#).<sup>7</sup>

## **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](#)<sup>8</sup> 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 Miller, J.D.

Special Assistant to the President and Title IX Coordinator

Mayer Administration Building, Room 210

325-486-6357

[michelle.boone@angelo.edu](mailto:michelle.boone@angelo.edu)

**You may also [file a report online](#)<sup>9</sup> 24/7.**

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, visit the [Title IX website](#).<sup>10</sup>

## **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.

# Course Schedule

Date	Lecture	Lab
June 6	Microbial World	
June 7	Microbial Cell Structure and Function	Basic Techniques
June 8	Microbial Growth and its Control	Microscopy and Stains
June 9	Molecular Information Flow	Gram Stains
June 10	Microbial Regulatory Systems	
June 13	<b>Exam I</b>	
June 14	Molecular Aspects of Microbial Growth	Enumeration of Bacteria
June 15	Bacterial Genetics	Antiseptics and disinfectants
June 16	Biotechnology	Osmosis and Lysozyme
June 17	Microbial Evolution	
June 20	Bacterial Diversity	
June 21	<b>Exam II</b>	Microbiology of food
June 22	Microbial Ecosystems	Antibiotic producer
June 23	Microbial Symbioses with Microbes and Plants	Identification of unknown
June 24	Microbial Symbioses with Humans	
June 27	Microbial Infection and Pathogenesis	
June 28	Innate Immunity	
June 29	<b>Exam III</b>	Identification of unknown
June 30	Adaptive Immunity	Identification of unknown
July 1	Person to person diseases	
July 5	Vectorborne and Soilborne diseases	CRISPR/Cas9
July 6	Waterborne and Foodborne Illnesses	<b>Paper Due</b>
July 7	Eukaryotic Pathogens	No labs
July 8	<b>Exam IV</b>	

<sup>1</sup> <https://www.angelo.edu/current-students/student-handbook/>

<sup>2</sup> <https://www.angelo.edu/academics/catalog/>

<sup>3</sup> <https://www.angelo.edu/live/files/27603-student-handbook-2020-21#page=96>

<sup>4</sup> <https://www.angelo.edu/current-students/disability-services/>

<sup>5</sup> <https://www.angelo.edu/content/files/14197-op-1011-grading-procedures>

<sup>6</sup> <https://www.angelo.edu/live/files/27603-student-handbook-2020-21#page=96>

<sup>7</sup> [https://www.angelo.edu/current-students/writing-center/academic\\_honesty.php](https://www.angelo.edu/current-students/writing-center/academic_honesty.php)

<sup>8</sup> <https://www.angelo.edu/content/files/14206-op-1019-student-absence-for-observance-of>

<sup>9</sup> <http://www.angelo.edu/incident-form>

<sup>10</sup> <https://www.angelo.edu/title-ix>