

**BIOL 2121 Microbiology for Science Majors LAB**  
**Sul Ross State University Spring 2022**  
*Lab time and location: Thursday 4:00-5:50 in WSB 203*

**Lab instructor:** Ms. Anne Marie Hilscher | **Office:** WSB 220 | **Phone:** 432.837.8820

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**Office Hours:** MWF 8:30-9:00 & 10-11:30; M 1:00-3:00; TR 2-3:00; & by appt. in WSB 220

**Recommended Manual:** *Benson's Microbiological Applications: Laboratory Manual in General Microbiology. Concise Edition.* 14e or 15e, Alfred Brown & Heidi Smith.

**Course Description:** This laboratory will focus on hands on learning of microscopy, aseptic technique, isolating and culturing bacteria, and identifying microorganisms.

**Lab attendance:** Lab attendance is mandatory. There will be no makeup labs. If you have a university approved excuse to be absent, you must make arrangements with the TA **before** missing lab. More than three (3) missed labs will result in a failing grade and possible withdrawal from the course. This being said, due to COVID19, **anyone feeling ill should not come to lab.** In the event that you miss class due to illness or other university-approved absences, contact your instructor via email to request missed material. (Approved absences include SRSU athletic events, death in the family, illness, etc. See [https://www.sulross.edu/wp-content/uploads/2021/07/fh-4\\_02-6\\_29\\_17.pdf](https://www.sulross.edu/wp-content/uploads/2021/07/fh-4_02-6_29_17.pdf) for details.)

**Grading Scale:**

Homework.....	100 pts
Lab Quizzes.....	50 pts
I.D. of an Unknown Report.....	100 pts
<u>Exams (2 @ 50 pts ea).....</u>	<u>100 pts</u>
<b>Total:</b>	<b>350 pts</b>

**Homework** is due the week after the lab is completed. **No late work will be accepted.**

**Quizzes** will cover the lab exercise(s) of that week. You must read the lab exercise **before** coming to lab. Quizzes cannot be made up. The top five quiz scores will be taken.

**I.D. of an Unknown Report.** Details for the Identification of an Unknown Bacterium Project will be announced.

**Exams.** Students cannot miss exams unless they have a documented, university-approved excuse; in these cases, the instructor needs to be informed **more than 24 hours in advance** of the exam. Any missed exams must be taken within one week of the original exam.

**Academic dishonesty and late or missed work:** All assessments should be your ownwork, unless it is a pair/group assignment. Any evidence that the work is copied from a peer or the internet or any other source will result in a zero for the assessment and you will be reported to the university for Academic Dishonesty. I do not accept late work.

**Students cannot miss exams** unless they have a documented, university-approved excuse; in these cases, the instructor needs to be informed in writing **>24 hours in advance** of the exam to allow time for the instructor to prepare a make-up exam. The make-up exam must be taken within 6 days of the original exam.

### TENTATIVE SCHEDULE (SUBJECT TO CHANGE)

Date	Lab	Lab Manual Chapter	Lab Topic
Jan 13			No Lab
Jan 20	1	1	Introduction to the microscope; Lab Safety
Jan 27	2	1, 5	Microbiology of pond water; Morphology of chloroplasts & cyanobacteria
Feb 03	3	6, 8	Ubiquity of bacteria, aseptic technique
Feb 10	4	9-12	Pure culture techniques, smear preparation, simple staining (methylene blue), negative staining
Feb 17	5	13, 14	Finish previous lab, gram staining, capsular staining
Feb 24			<b>Midterm Exam</b>
Mar 03	6	15-17	Spore staining, acid-fast staining, motility determination
Mar 10			<b>No Lab - Spring break</b>
Mar 17	7	24, 34-39	Finish previous lab, effects of oxygen on growth, morphological study of unknown bacterium, cultural characteristics
Mar 24	8	32, 34-39	Oxidation and fermentation tests, use of Bergey's manual, pouring plates, efficacy of disinfectants
Mar 31	9	7, 34-39	Fungi, Unknown Project
Apr 07	10	7, 34-39	Fungi cont'd, Unknown Project
Apr 14	11	34-39	Finish Unknown Project - Lab Cleanup
Apr 21			<b>Final Exam</b>

#### LAB BEHAVIOR:

- \* *do* wear gloves when asked to do so (if you can wear a Small glove, please do. We are low on other sizes.
- \* *do* disinfect things that you touch
- \* *do* wear closed-toes shoes and tie your hair back
- \* *do* keep six feet of distance between you and your classmates and instructor
- \* *do* be on time
- \* *do* turn off your phone and put it away; phone use is distracting to your peers and the instructor
- \* *do* feel free to take notes on a laptop but don't use your laptop for anything else, it's distracting to others
- \* *do* ask relevant questions and discuss topics in a civil and respectful manner
- \* *do not* sleep, eat or drink in lab

**CORE OBJECTIVES ADDRESSED:**

- 1) Communication Skills – Students will effectively communicate the results of scientific investigations; using oral, written, and visual communication, either in group discussions or on written exams.
- 2) Critical Thinking Skills – Students will include creative thinking, innovation, inquiry, and analysis required to relate new information with previous information in a way that demonstrates the diversity and similarity due to evolutionary ancestry.
- 3) Empirical and Quantitative Skills – Students will use basic math skills to solve problems (e.g. related to genetic outcomes, cellular energy production, and probability) resulting in informed conclusions.
- 4) Teamwork Skills – Students will work effectively with others to support a shared goal during lab sessions on activities, such as dissections, problem solving, and other experimental procedures.

**MARKETABLE SKILLS:** A student getting a degree in the Biological sciences would be expected to acquire the following marketable skills by graduation.

- 1) Students will be able to organize, analyze, and interpret data.
- 2) Students will be proficient at using presentation software.
- 3) Students will acquire experience in managing time and meeting deadlines.
- 4) Students will gain the ability to speak effectively and write concisely about scientific topics.
- 5) Students will acquire experience and guidance in the development of professional email correspondence.

**ADA Statement:** Any student who because of a disability, may require special arrangements in order to meet the course requirements should contact the instructor as soon as possible to make necessary arrangements. If an accommodation is needed, students must present their accommodation letter, obtained from Accessibility Services, as soon as possible. Please note that instructors are not permitted to provide classroom accommodations to a student until the appropriate verification has been received. Accessibility Services is in Ferguson Hall room 112. You can make an appointment by calling Mary Schwartze Grisham at 432 837-8203.

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**Academic Integrity.** Students in this class are expected to demonstrate scholarly behavior and academic honesty in the use of intellectual property. A scholar is expected to be punctual, prepared, and focused; meaningful and pertinent participation is appreciated. Examples of academic dishonesty include but are not limited to: Turning in work as original that was used in whole or part for another course and/or professor; turning in another person's work as one's own; copying from professional works or internet sites without citation; collaborating on a course assignment, examination, or quiz when collaboration is forbidden.