

Biotechnology II (2020-2021)

Distance Learning Syllabus

I. General Information

Instructor:	Roxana Husselstein
Room:	D108
Office Hours:	T/TH 1:15-2:15pm, or by appointment Office Hour Zoom Link
Email:	rhusselstein@muhsd.edu
Website:	echsscience-rh.weebly.com
Required Text:	<i>Biotechnology: A laboratory skills course</i> 1st ed. by Kirk Brown published by Bio-Rad.
Credits:	6 units possible (maintenance of a B average required over both years- Biotech 1 & Biotech 2), transferrable to Merced College or UC Davis

II. Class Description

Biotechnology 1 & 2 is an introductory course in the theory and principles of biotechnology and how the field applies to meeting the needs of today's world. Topics covered within the lectures include the application of Biotechnology in medicine, microbial engineering, biomanufacturing, bioremediation, agriculture, and biofuels. Biotechnology 1 & 2 are the equivalent of BIOL 32/32L at Merced College.

III. Daily Required Materials

- A fully charged chromebook or personal computer
- writing instrument (pen, pencil, etc)
- composition notebook (non-spiral recommended)

IV. Zoom Expectations

- Be on time- use your first and last name when logging in.
- Be present- you are expected to attend class for the entire period, the number of minutes determines your attendance.
- Participation is mandatory.
- One mic- please stay muted unless speaking (this helps cut-down background noise)
- Minimize distractions to yourself and others- to ensure your full attention, stay off phones, and try to find a space away from people and pets.
- Non-verbal communication- you can show a thumbs up/thumbs down if you agree or disagree or use the icons provided in zoom
- Chats- you can use this to ask and answer questions
- Disruptive and negative behavior may result in removal from zoom and will be passed on to an administrator.

V. Student Learning Goals

1. To provide an overview of basic knowledge, principles, methodologies, theories, & perspectives in biotechnology.
2. To offer opportunities to work in groups with other students to practice effective communication about concepts & issues in biotechnology.
3. To provide a broad understanding, appreciation of biotechnology & encourage continuous inquiry & lifelong learning.
4. To provide the framework to critically evaluate and use information from various scientific sources to answer questions relevant to biotechnology.
5. To understand the relationships between the fields of biology, chemistry, & other sciences.
6. To appreciate the interdependence of humans, natural ecosystems, & diversity of life on earth.
7. To develop more informed & responsible citizens with respect to issues concerning the living world.

VI. Grading

Your grade in this course will be determined on two factors that are weighted:

40% Assessments: *Exams, Quizzes, Lab Reports, Lab Practicum, Lab Preparedness, Projects*
40% Concept Development: *Practice of concepts, Warm ups, Reflection pieces,*
20% Daily Participation: *Whole class discussions, breakout room discussions, polls, exit tickets, etc. during zoom*

Grade Calculations

Grades reported in Aeries will be based on the percentage of points earned.

- A 90-100+%
- B 75-89.9%
- C 60-74.9%
- D 50-59.9%
- F 0-49.9%

After the two years, when determining your college grade, the traditional grading scale (seen below) will be used: A 90-100% B 80-89% C 70-79% D 60-69% F 0-59%. **A B-average is required to be eligible. Both Biotech 1 & 2 must be complete, there is no partial credit or units for taking only one semester or year.**

VII. Class Policies

Biotechnology is a laboratory course and as such requires your active participation. Because the laboratory setups change from class to class, it is not possible to make up missed laboratories once the allotted time for the lab is done. **You are still required to do a lab write-up even when you are absent for a lab. Ask your group for the data, make sure to answer the lab questions on your own, and indicate who gave you the data. Failure to do this will result in only half credit being received for that lab.**

There will be a quiz at the end of each chapter and an exam at the end of each semester. I have a zero tolerance for cheating. Anyone caught cheating on a quiz or the final will receive an F and the matter will be turned over to the appropriate student disciplinary committee. Submitting write-ups for another student is also cheating. This is an articulated course through the college, tests and quizzes cannot be retaken.

For most of the laboratories, you will work in groups of two to four students. However, **each of you will hand in your own lab write-up, with your answers written in your own words. Lab notebooks are generally due a few days after a lab is completed.** There are times when labs are sequential, in these cases lab notebooks will be collected after the last lab of that unit. Labs will be graded based on completion of all parts of a lab notebook, answering questions correctly, data collection, graphs/diagrams requested, and correct interpretation of the results.

VIII. Fall Semester Overview

Ch 3 & 5 Topics
Microbiology
Making Media and Plates
Kirby-Bauer
Koch's Postulates
Gram Staining
Serial Dilution and Quantification
Bacterial Transformation
Purification of Plasmids

*This syllabus may be modified at any time at the discretion of the instructor. Sufficient notice will be given to students so that they may adjust for changes as necessary.