Antelope Valley College
Fall 2020

Biology 204- General Microbiology
Online, Zoom link will be provided in Canvas
Wednesdays 1800-2105
Course # 72463

Instructor: Dr. Jedidiah Lobos
Office Hours: MW 0925-1025 & 1300-1400, TR 1630-1800 through Zoom
E-mail: LobosBiology@gmail.com or jlobos@avc.edu (enter "Bio 204" on the subject line or e-mail may be overlooked)
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Sheriff Department Emergency Contact Number

- Dial direct: 661-722-6399
- From campus phone #4444 or #6399

Textbook: Microbiology: A Systems Approach, 6th Edition, ISBN: 9781260451191

Materials Needed: You will need paper, colored pencils, and a computer with functioning webcam. The computer with webcam is absolutely required on the first day of class. If you do not have one, you may need to contact AVC to obtain a loaner. You need these materials in order to interact through Zoom and for Proctorio.

Course Description: This course is designed to present an overview of the biology of microorganisms including bacteria, viruses, protozoa, fungi and helminths. Information is directed towards students in preprofessional programs for nursing, dental hygiene, surgical technology, physician's assistant, food science, environmental monitoring, animal and crop sciences as well as biological science majors. Wherever possible, new development in Biotechnology, Virology and Immunology are discussed to provide students with current knowledge in this important field of science. The laboratory introduces a broad spectrum of microorganisms and the concepts and techniques required to identify and classify unknown bacteria. (CSU, UC, AVC)

Course Objectives: At semester's end, the student will be able to demonstrate a general understanding of the true impact that each organism has on one another. Other goals include:

1. Define microbial morphology, physiology, behavior and ecology.
2. Discuss microbial metabolism and compare cellular processes to those of the human host.
3. Describe, analyze and evaluate interactions that operate between microbes and the host organism in disease and in health.
4. Describe the bacteria, viruses, protozoa, fungi and helminths responsible for common diseases.
5. Understand the role of microorganisms in food production, water contamination and sewage treatment.
6. Define terms necessary to understand human-microbe interaction and epidemiology.
7. Describe the common sources of infection, pertinent routes of entry and communicability of disease producing microbes.
8. Describe microbial pathogenesis of specific invasive factors, toxins and other mechanisms by which microbes cause diseases.
9. Evaluate the role of blood and tissue processes in protecting the host during non-specific defense, the cell-mediated and humoral immunity during specific defense. Appreciate the role of vaccines in disease prevention.
10. Demonstrate an understanding of microbial genetics, specifically gene expression, genetic transfer and recombination in bacteria, mutations and mutagens and their effects on a microbe.
11. Develop familiarity with several techniques commonly used in Biotechnology.
12. Understand and comply with laboratory safety rules and the use of aseptic techniques and methodologies throughout the course.
13. Demonstrate the ability to identify common bacteria by recognition of cell shape, colony morphology, and physiological characteristics.

Student Learning Outcomes:

1. Describe the characteristics of the bacteria, viruses, protozoa, fungi, and parasitic worms and their interactions with the host organism, and how they cause diseases. Understand their role in food production and spoilage, water contamination, and sewage treatment.

2. With the aid of laboratory skills, the student will be able to independently investigate and identify unknown bacteria, and prepare a scientific report.

Concurrent Enrollment & Course Prerequisites: Completion of BIOL 101 or completion of BIOL 110 or completion of BIOL 120 and completion of CHEM 101. **Advisory**: Completion of BIOL 201, completion of BIOL 202 , completion of CHEM 102, completion of ENGL 101, completion of COMM 103

Student's E-mail Address: Each student **must** provide their e-mail address by the **second** class meeting. To do this, students must send an e-mail to jlobos@avc.edu or LobosBiology@gmail.com from each e-mail address that they check regularly (e.g. yahoo, hotmail, gmail, AVC). On the subject line enter "Bio 204". The body of the message should list the student's name. Students are advised to check their e-mail frequently. Advise the instructor of any changes or corrections to your e-mail address.

Disruptive or Disrespectful Behavior: Disruptive or disrespectful behavior will not be tolerated in the class. Examples of such behavior may include talking while others in the class (including the instructor) are talking and disregard of any of the policies that are outlined in this syllabus. If you need to step away or speak to someone while in class, please ensure that your microphone/camera is off and then step away.

Cell Phone Policy: Use of cell phones is disruptive to the class (including an online class). Please turn your cell phone completely off or silence it during class. Advise people who might call you that they should not do so during the scheduled class time. Cell phones may not be answered during a class session, unless it is during an instructor authorized break. It is also not permitted to send text messages while class is in session.

Tardiness and Attendance: Regular and prompt attendance to class is essential both for learning and active participation in the class. Each student needs to be present to hear about any schedule changes, general information about the class, and the lecture itself. In addition, quizzes will be scheduled at the beginning of a class session and you must take the quiz during the scheduled time. Attendance may be taken at any time during class and in any manner as deemed appropriate by the instructor. **If a student's absences in a specific class exceed the number of hours the class meets per week, the student may be prohibited from further attendance in the class.** The first two days of class are important, therefore missing any one of these days means the student might be dropped from the class.

Evaluation: Your grade will be computed based on the following criteria:

Participation= 50 pts
Student Presentation= 50 pts
Quizzes= 100 pts
Midterm= 100 pts x 3= 300 pts
Final= 150 pts
Total lecture points= 650 pts

Your final grade will be determined as follows:
90-100% =A
80-89% =B
70-79% =C
60-69% =D
<59% =F

Preparation and Participation: Every student is expected to be actively involved in the lecture sessions and to come to each session prepared (having thoroughly read and studied the corresponding chapters or handouts assigned). Each student should also participate by contributing ideas or information, and asking questions. The instructor will ask questions periodically to evaluate the participation of individuals in class. **The answers to these questions will not be graded based on if they are correct or not.** Rather, the answers will be counted for participation points for that day. Answers will either be verbally communicated or primarily done through the Zoom chat box. **Participation is KEY especially in an online learning environment.**

Quizzes and Exams: The quizzes and exams may consist of multiple choice, short answer, or essay questions and the format may vary from quiz to quiz. The format of exams and quizzes will be explained in class. **Except for excused medical or certified family emergencies or recognized religious holidays, no makeup quizzes or exams will be given.** Quizzes and exams will be given on the day scheduled. At the discretion of the instructor, additional short quizzes may be given on any class day. The instructor reserves the right to adjust testing conditions, randomize and assign seating for a quiz or exam, rearrange students during a quiz or exam, or to immediately terminate the quiz or exam of any student who, in the opinion of the instructor, is caught cheating. **Proctorio will be used to monitor your testing sessions.**

Extra Credit: At the instructor's discretion, extra credit opportunities **may** be offered to all students in the class, however students should not assume that "extra credit" opportunities will automatically be given, and there will be no "individualized" extra credit assignments.

Withdrawal Information: It is the student's responsibility to withdraw from a class. If you fail to withdraw by the appropriate date, you will receive the letter grade you would have earned at the end of the semester. For this term, the last day to drop with a "W" is **11/6/2020**.

Incompletes
A grade of "I" (Incomplete) will not be given simply due to poor performance in the course. An "I" is to be used only when a portion of the required coursework has not been completed and evaluated in the prescribed time period due to unforeseen but fully justified reasons. A substantial portion of the course requirement must have been completed with a passing grade and there is still the possibility of earning credit. The work that is incomplete normally should be of such a nature that it can be completed independently by the student for later evaluation by the instructor. An incomplete will not be assigned when a student would be required to attend a major portion of the course when it is next offered. Students who believe they meet the necessary conditions to be assigned an incomplete arrange to meet in person with the instructor. The process should be completed in person prior to submission of final grades by the instructor. Students are encouraged to read and understand the statement on incompletes in the current Antelope Valley College Catalog.

Reasonable Accommodations: If you have a legally protected disability under the Americans with Disabilities Act (ADA) or California discrimination law, and you believe you need reasonable accommodation to participate fully in this class, please make an appointment to see me during office hours to discuss your need(s).

Academic Honesty: Cheating of any kind will not be tolerated. If a student is caught cheating, the instructor reserves the right to assign the assignment, quiz, or exam a grade of "F" to the student caught cheating. **From the 2016-2017 AVC Catalog: (a)** Violation of the Academic Honesty Policy: Dishonesty, including but not limited to, cheating or plagiarism. Plagiarism – from the Latin word for "kidnap" – involves using another's work without giving proper credit, whether done accidentally or on purpose. This includes not only works and ideas, but also graphs, artwork, music, maps, statistics, diagrams, scientific data, software, films, videos and the like. Plagiarism is plagiarism whether the material is from published or unpublished sources. It does not matter whether ideas are stolen, bought, downloaded from the internet, or written for the student by someone else – it is still plagiarism. Even if only bits and pieces of other sources are used, or outside sources reworded, they must still be cited. To avoid problems, students should cite any source(s) and check with the instructor before submitting an assignment or project. Students are always responsible for any plagiarism in their work. An instructor who determines that a student has cheated or plagiarized has the right to give an "F" grade for the assignment or examination. Antelope Valley College reserves the right to utilize electronic means to investigate possible academic violations. Enrollment in any class implies student agreement and consent that all assignments are subject to submission for textual similarity review to an electronic database. **(b)** Violation of class assignments, examination rules, e.g., communicating or transferring information to another student, using any materials such as books, notes, etc., other than those expressly allowed for the exam, looking at another student's exam, etc. **(c)** Unauthorized preparation, giving, selling, transfer, distribution, or publication, for any commercial purpose, of any contemporaneous recording of an academic presentation in a classroom or equivalent site of instruction, including, but not limited to, handwritten or typewritten class notes, except as permitted by any college policy or administrative procedure.

AB 705: Based on statewide research and the newly enacted AB 705 legislation, Antelope Valley College students are eligible to begin English and mathematics courses at the transfer-level. This is a new process for AVC students that uses high school coursework, grades and grade point average to place students into English and mathematics courses. We want to remind you of the various resources available for academic assistance including workshops and tutoring in the Learning Center and arithmetic to calculus support in the Math Computer Lab in ME 100. To see a complete list of English, reading and mathematics workshops, visit https://www.avc.edu/studentservices/lc/. We encourage you to visit the Math Computer Lab and use these resources for support with your courses. Do not hesitate to ask for help, and we hope you have a great semester!

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Week	**Date**	**Topic**	**Lecture #**	**Chp #**
1	8/19	**Introduction, Chemical Foundations of Life**	1,2	1,2
		Prokaryotic Cell Structure and Function	3,4	3,4
2	8/26	**Eukaryotic Cell Structure And Function (I - III)**	5	5
		Eukaryotic Cell Structure And Function (I - III) (cont); Lecture Quiz #2	6	5
3	9/2	**Eukaryotic Cell Structure And Function (I - III) (cont)**	7	5
		Viruses, Soil Microbiology and Biogeochemical Cycles	8,9	6, 24
4	9/9	**Microbial Growth (Lecture Quiz #1 due)**	10	7
		Microbial Growth (cont)	10	7
5	9/16	**Exam #1**		
		Microbial Metabolism I	11,12	8
6	9/23	**Microbial Metabolism I (cont) and II**	11,12	8
		Microbial Metabolism I and II (cont)	11,12	8
7	9/30	**Microbial Metabolism I and II (cont); Lecture Quiz #3**	11,12	8
		Microbial Genetics	14	9
8	10/7	**Exam #2**		
		Microbial Genetics (cont)	14	9
9	10/14	**Genetic Engineering & Recombinant DNA (Student presentations begin)**	15	10
		Genetic Engineering & Recombinant DNA	15	10
10	10/21	**Microbial Control**	16	11
		Microbial Control (cont); Lecture Quiz #4	16	11
11	10/28	**Microbial Control (cont)**	16	11
		Antimicrobial Therapy	17	12
12	11/4	**Exam #3**		
		Microbe-Human Interactions: Infection and Disease	18	13
13	11/11	**Veteran's Day**		
14	11/18	**Nonspecific Defenses of the Host**	19	14
		Nonspecific Defenses of the Host (cont); Lecture Quiz #5	19	14
15	11/25	**Nonspecific Defenses of the Host (cont)**	19	14
		Specific Defenses of the Host	19	14
16	12/2	**Final Examination**		
******Topics and dates are subject to change with notice******				

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Important dates to make note of!

Date	
8/26	**Quiz #2**
9/7	**Labor Day**
9/9	**Quiz #1 Due**
9/16	**Exam #1**
9/30	**Quiz #3**
10/7	**Exam #2**
10/14	**Student Presentations begin**
10/21	**Quiz #4**
11/4	**Exam #3**
11/6	**Last day to drop with a "W"**
11/11	**Veteran's Day**
11/18	**Quiz #5**
12/2	**Final Examination**

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