



Micro 20: General Microbiology Spring Semester 2015

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Office hours: M/W 11:15am – 12:30pm
Tu/Th 9:00am – 10:30am

Section #: 1511
Lecture: MSA 203 M/W 9:35am – 11:00am
Laboratory: MSA 204 M/W 11:05am – 12:30pm
Lab Instructor: Dr. Kareen Martin

****To request appointments, please email instructor****

Course Description:

This course is a four-unit introduction to the fundamental principles of microbiology. It will satisfy the microbiology requirement for UC and CSU. The prerequisites of the course include a basic biology course: **Biology 3 A and B** – Introduction to Biology, or equivalent.

The course entails the study of microorganisms, including their structure, metabolism, methods of multiplying, and classification. The techniques used to control microorganisms and the human body's defenses against microbial attack are emphasized. The laboratory covers the microscopic examination of microorganisms, aseptic techniques, cultivation of bacteria, the effects of anti-microbial agents, the influence of the environment on bacterial growth and cultural techniques for studying and identifying microorganisms.

Student Learning Outcomes:

Upon successful completion of this course, the student should be able to demonstrate an understanding of:

1. The physiology, molecular composition, identification and genetics of microorganisms
2. The structure and replication of infectious particles
3. The molecular and cellular principles of the human immune response
4. The basic principles of antimicrobial chemotherapy and growth control
5. The principles of microbial pathogenicity, and characteristics of selected infectious diseases

Required Text:

1. Tortora, Funke, Case. *Microbiology: an Introduction*, 11th ed., Benjamin Cummings Publishing Co.
2. Leboffe, Pierce. *Microbiology Laboratory Theory & Application*, 3rd ed., Morton Publishing Company.

Materials:

1. 8 Scantrons Form 882 E – Each student is responsible to turn them in before February 25th (for 4 quizzes and 4 exams)
2. Quad Composition Notebook – center-sewn, hard cover, not college ruled, not perforated sheets
3. Lab Coat (recommended)
4. Gloves (recommended)
5. Permanent marker (Sharpie)
6. Colored pencils – for laboratory notebook drawings (No felt-tip pens)
7. Blue or black pen for lab notebook, no pencils or other colors allowed

Attendance:

MISSING ANY CLASS OF THE FIRST WEEK of lecture OR lab, without a reasonable excuse and without notifying the instructor, will result in immediate exclusion from the class.

Consistent attendance to each lecture and laboratory is required for successful completion of this course. Attendance will be taken at the beginning of each class. If a student misses four classes or more, either lecture OR lab, he/she may be dropped from the course. Coming late to class or leaving early is irresponsible, impolite, disruptive, and not acceptable. If a student *needs* to be late, miss a class or leave early, please inform the instructor, preferably by email and before the class. **Late students may be marked as absent**, since attendance is taken at the beginning of the class and not after. Leaving early from the class will be noted and may count as an absence. Walking in and out of class is rude and disruptive. Any student who does this excessively may be asked to leave the class and will count as an absence. **Please, always notify the instructor** if you will miss a class due to an illness or any other emergency.

Any student wishing to withdraw from the course must follow the correct procedure with the admissions office. It is the student’s responsibility to drop the course should he/she decide to stop attending, DO NOT rely on the instructor for this. Students who stop attending class and fail to follow the correct procedure will receive the letter grade of the scores accumulated for the semester. No withdrawals are permitted after May 8th. Attendance points are earned by being in class and conducting appropriately. Attendance points are as follow:

3 or less absences	20 points
4 - 5 absences	15 points
6 - 7 absences	10 points
8 - 9 absences	5 points
10 or more absences	0 points

Email Correspondence:

- Electronic mail is the official method of communication. Students’ LACCD academic email addresses are recorded in the college’s electronic directories and records. Please, make sure to check it often.
- **Emails to the instructor need to have the name of the course and section in the subject, and should be addressed with appropriate salutation so that is clear that the message is not junk mail. Emails will be normally replied within 24 hours only on weekdays. E-mail messages that are poorly written, unclear or disrespectful will not be replied to.**

Testing and Grading:

Points may be earned from the following:

Lecture Exams (100 pts each)	400
Assignments/Homeworks	25
Disease Presentation	50
Lab Quizzes (20 pts each)	80
Lab Notebook	100
Microscope care	25
Unknown Lab Report	50
<u>Attendance and Participation</u>	<u>20</u>
Estimated total points	*750

*Note: this is an estimate of possible points and it is subject to change

Calculating your grade: You may calculate your grade at any time during the semester. Simply sum all your quizzes, assignments and exam scores. Then, divide this sum by the total number of points you could have earned if you had gotten 100% on everything. For example, if you earn 160 points of a possible 175 points, at that time in the semester your grade is $160/175 = 0.914$ or 91.4%.

Grading scale:

Grade	Percentage
A	100% - 90%
B	89% - 80%
C	79% - 70%
D	69% - 60%
F	59% - 0%

Lecture Exams and Lab Quizzes:

See schedule for dates and material for each exam. Exams will cover the material discussed during lecture and all the assigned reading. The exams will consist of multiple choice, matching, and short-answer questions. All exams are to be taken on time. Lab quizzes will be based on lab exercises, including procedures and results of exercises before quiz. All quizzes and exams will be given at the beginning of the period. Exams are approximately 1.5 hours and quizzes are of approximately 20-25 minutes each. If a student comes in after the first student has handed in the exam or quiz, he/she can no longer take it and will have missed that exam or quiz.

Examination Absence Policy: Makeup exams or quizzes will not be given. An absence to a midterm exam or a quiz can be excused, only for documented illnesses, documented emergencies, religious holidays, or by prior arrangement with, and approval of the instructor. For approval consideration, documentation is required to be submitted no later than 1 week after the date of the examination. If the absence is considered excused, the score of the missed midterm exam or quiz will be replaced with the average of the other 3. If the absence is not considered excused, the score will be ZERO. If a second exam or quiz is missed, it will be recorded as a ZERO. An absence to the final exam will not be excused and the score will be ZERO. If there are documented, extraordinary circumstances that do not allow a student to take the final exam, the student needs to contact and inform the instructor *immediately*. After the instructor evaluates the circumstances, an incomplete grade will be considered. These cases are extremely rare. Please read the incomplete policy below. There will be no exceptions.

Incompletes: Please note that "Incomplete" grades are extremely rare. They may only be considered if a student is passing the class with a C or better on the final drop date and is unable, due to an emergency, to complete the course as scheduled. Otherwise, if the student decides he/she cannot finish the course with a satisfactory grade, it is his/her responsibility to withdraw officially, on or before May 8th.

Homeworks and In-class Work: Homework and in-class work might be given during the semester. In-class work may consist of group assignments. There will be no makeup for missed in-class work. In addition, none will be accepted late. Any late homework will be penalized with a 10% deduction per day. Please see below for details.

Late Notebooks and Reports: Any late notebooks or reports (and homeworks) will be penalized by subtracting 10% from the total score, for each day late (includes non-meeting days and weekends). Turning in the assignment after class, even if it is the same day, will also be penalized with a 10% deduction.

Important General Rules:

- Because of the high volume of material covered in this course, class time is NOT allocated for in-depth discussion of exams or review of scores. Please schedule an appointment for any questions about exams.
- There are no extra credit assignments.
- No cell phones or pagers are permitted. If you bring your cell phone to class, be sure to have it in a mode where it will not ring and disturb others. If you have to answer an *emergency* phone call, please step out of the classroom quietly. Devices of this type should be placed on silent or vibrate and never visible during class time. See the Attendance section above for class policy about walking in and out of the class. Any student who interrupts due to cell phones or pagers during lecture or lab may be asked to leave the class and this will count as an absence.
- No guests, or children are allowed in the classroom or during lab.
- Students are required to arrive in time. Late arrivals or early departures: please enter or exit as quietly as possible. See the Attendance section above for class policy.
- Students are responsible for any assignments, information or any announcements given during class in their absence.
- Absolutely no cheating will be tolerated. Students caught cheating will receive a zero for the assignment or examination and reported to the Academic Affairs office for disciplinary action. See Academic Honesty Policy below.
- Grading on laboratory quizzes, exams, assignments, notebooks and participation will be determined by the instructor. The laboratory scores will be combined with the lecture scores to determine the final course grade.
- To have a tangible record of scores, students should save all graded and returned documents and keep track of their performance and progress in class.
- It is the responsibility of the student to be aware of the rules and regulations for student behavior as listed in the WLAC Catalog. Failure to comply with these regulations will result in the appropriate disciplinary action.
- Audio recorders are allowed. If a cell phone is used as a recorder, it needs to be on airplane mode.

Students with Disabilities and/or Special Needs:

Any student who feels she/he may need an academic accommodation based on the impact of a disability, should contact Disabled Students Programs and Services (DSPS) at (310) 287-4450 or visit their office in room Student Services Building 320.

Academic Honesty Policy:

Pursuant to West Los Angeles College's "Standards of Student Conduct", all forms of cheating and plagiarism are absolutely forbidden. Since dishonesty in any form harms the individual, other students and the college, policies on academic integrity are strictly enforced. Students should read WLAC's publication on student conduct on cheating & plagiarism outlined in the College Catalog or at http://www.wlac.edu/academics/pdf/WLAC_10-12Catalog_Policies.pdf.

West Los Angeles College is committed to preparing students to compete confidently and effectively in a rapidly changing, information-driven, technological global community. Students are expected to be honest and ethical. No acceptable rationale for dishonesty can be based on physical, emotional or learning challenges. The college expects that students do their own academic work. Acceptable academic conduct does not include cheating, plagiarism or any other unethical academic behavior. It is the student's responsibility to know what conduct is academically honest.

Suggestions for success in Microbiology 20:

- Expect to work hard and dedicate time to the class.
- Try to take good notes and be organized with all course material.
- When turning in assignments, make sure they are legible and neat.
- Come to class prepared, print the lecture PowerPoint and read the lab procedures before class (see the lecture and lab schedule for details).
- Keep-up with course material as you go, do not wait until the week before the test to start studying!
- Make time to study, pencil it into your schedule. Also write down test days, and assignment due dates on your calendar.
- For each lecture, read the assigned chapter and make a note of any questions.
- Review your study materials!!! Many terms and concepts presented in class need to be reviewed and repeated for complete understanding of the material. Some students find it useful to make flash cards for terms and concepts.
- Find a study partner or small study group.
- Take study breaks. Studying is more effective when done frequently in small blocks of time rather than continuously for several hours once a week.
- Take advantage of office hours and come prepared with questions you have formulated from the reading or other assignments.
- Use time in lab effectively. Read the lab exercises before coming to lab so that you know what you will be doing.
- Complete lab reports in lab so that you can ask questions and work when the information is fresh in your mind.
- After each exam, review the material that you missed or did not completely understand. Please attend office hours to review your exam. Some information in this course is cumulative. Additionally, many of the topics presented in microbiology are a foundation for other classes in the biological sciences. Learning the information as you go will help you understand future topics.

**Lecture and Laboratory
Spring 2015 Schedule**

Week #	Date	Lecture Topic	Assigned Chapter	Laboratory Topic	Assigned Exercise
1	M 2/9	Course Overview Introduction to Microbiology	1	Lab Orientation and Locker Check-in Ubiquity of Microorganisms	2-1
	W 2/11	The Chemistry of Microbiology	2	Observations of Ubiquity of Microorganisms Aseptic Transfer and Inoculation Methods	1-3
2	M 2/16	President's Day Holiday – No Class			
	W 2/18	Cell Structure and Function	4	Observations of Aseptic Methods	
3	M 2/23	Microbial Metabolism I	5	Use and Care of the Microscope	3-1
	W 2/25	Microbial Metabolism II	5	Examination of Microscopic Eukaryotes: Fungi	3-3
4	M 3/2	Microbial Growth	6	Examination of Microscopic Eukaryotes: Protozoa	3-3, 3-4
	W 3/4	Catch-up day		Quiz #1: Exercises 2-1, 1-3, 3-1, 3-3, 3-4 Notebooks Due Parasitic Helminths	12-4
5	M 3/9	Exam #1 Chapters: 1-2, 4-6		Smear Preparation and Simple Stain	3-5
	W 3/11	Microbial Genetics I	8	Gram Stain	3-7
6	M 3/16	Microbial Genetics II	8	Gram Stain	3-7
	W 3/18	Characterizing and Classifying Viruses (and other particles)	13	Acid-Fast Stain	3-8
7	M 3/23	Characterizing and Classifying Viruses (and other particles)	13	Endospore Stain	3-10
	W 3/25	Infection, Infectious Diseases, and Epidemiology	14	Quiz #2: Exercises 12-4, 3-5, 3-7, 3-8, 3-10 Notebooks Due Pure Culture Techniques: Streak Plate Method of Isolation	1-4
8	M 3/30	Microbial Mechanisms of Pathogenicity	15	Streak Plate Method: Sub-culturing	
	W 4/1	Catch-up day		Streak Plate Method: Evaluation Effect of UV Radiation on Microbial Growth	2-13
	M 4/6	Spring Break – No Class			
	W 4/8	Spring Break – No Class			
9	M 4/13	Exam #2 Chapters: 8, 13-15		Observations of Effect of UV Radiation Chemical Germicides: Effects of Disinfectants and Antiseptics	2-14
	W 4/15	Innate Immunity	16	Observations of Chemical Germicides Effect of Temperature on Microbial Growth	2-9

10	M 4/20	Adaptive Immunity	17	Observations of Effect of Temperature Unknown: Introduction	Handout
	W 4/22	Adaptive Immunity	17	Quiz #3: Exercises 1-4, 2-13, 2-14, 2-9 Notebooks Due Unknown: - Gram Stain and Streak Plate Isolation	
11	M 4/27	Vaccines Immunological Disorders	18 (part) 19 (part)	Unknown: - Gram Stain and Streak Plate Isolation	
	W 4/29	Antimicrobial Drugs	20	Unknown: - Macroscopic Characteristics and Working Stock Preparation	
12	M 5/4	Catch-up day		Unknown: - Carbohydrate Fermentation: Phenol Red Broth - Catalase Test	5-3 5-5
	W 5/6	Exam #3 Chapters: 16-17, 18-19 (parts), 20		Unknown: - Observations of Carb Fermentation - Methyl Red and Voges-Proskauer Tests - Citrate Test	5-4 5-8
13	M 5/11	Student Presentations: Microbial Diseases of the Skin and Wounds	21	Unknown: - Observations of MR-VP and Citrate Tests	
	W 5/13	Student Presentations: Microbial Diseases of the Nervous System	22	Unknown: - Starch Hydrolysis - H ₂ S production: Kligler Iron Agar	5-12 5-21
14	M 5/18	Student Presentations: Microbial Diseases of the Respiratory System	24	Unknown: - Observations of Starch Hydrolysis and H ₂ S production * Test catch-up	
	W 5/20	Student Presentations: Microbial Diseases of the Digestive System	25	Antimicrobial Susceptibility Test * Unknown Test catch-up and Final Results	7-3
15	M 5/25	Memorial Day Holiday – No Class			
	W 5/27	Student Presentations: Microbial Diseases of the Urinary and Reproductive Systems	26	Observations of Antimicrobial Susceptibility Quiz #4: Exercises 5-3, 5-4, 5-5, 5-8, 5-12, 5-21, 7-3 Notebooks Due Unknown Report Due Clean up and Locker Check-out	
16 Finals Week	W 6/3	Exam #4 10:15am – 12:15pm Chapters: 21-22, 24-26			

Note: This schedule is subject to change at the discretion of the instructor.

Important Dates

Last day to drop classes with a refund/no fee and w/o a "W": February 20th
Last day to drop classes with a "W": May 8th