West Los Angeles College Spring 2014

MICROBIOLOGY 20
General Microbiology - Section

Instructor: Kareen Martin
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Laboratory: M-W 11:05am - 12:30 pm

Office hours: Before class **in room MSB211**

Room: MSA 204

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 lecture and laboratory. Many of the concepts introduced in fundamental biology and chemistry courses are brought together in the study of microbiology.

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 antimicrobial agents, the influence of the environment on bacterial growth and cultural techniques for studying and identifying microorganisms.

PREREQUISITE VERIFICATION

A copy of official transcript showing successful completion of college level biological science course Biology 3 (or equivalent) must be submitted to the instructor by . A passing grade of C or higher is recommended. Please, highlight the course on the copy of the transcript. Failure to comply with this requirement may result in exclusion from the class.

STUDENT LEARNING OUTCOMES

As a result of taking this course, the student will:

1. Practice critical thinking by describing:
   - The morphology, physiology and classification of bacteria, protozoa and fungi
   - The structure and mode of multiplication of viruses
   - Selected human diseases caused by bacteria, protozoa, fungi, parasitc worms nad viruses
   - The physical and chemical methods used to control microorganisms in our environment
   - The molecular and cellular basis for the human immune response
   - The principles of chemotherapy, hypersensitivity , immunization, and serology
2. Achieve technical competency in the microbiology laboratory.

REQUIRED TEXT

1. Brown, A.E. *Benson's Microbiological Applications*, Short version, 12th ed., McGraw-Hill Science /Engineering /Math Publishing Co.

MATERIALS

1. 4 scantrons Form 882 E – Each student is responsible to bring one to each examination (4 quizzes)
2. Quadrangle Composition Book
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

Consistent attendance to each laboratory is required for successful completion of this course. Attendance will be taken at the beginning of each class. If the student misses more than three classes, either lecture or lab, he/she may be dropped from the course. Coming late to class and leaving early is irresponsible, impolite, disruptive and is not acceptable. Of the student needs to be late, miss a class or leave early, please inform the instructor, preferable by email or before the class. Late students will 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 absent.

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 to do this. Students who stop attending class and fail to follow the correct procedure will receive the letter grade of the scores they have accumulated for the semester.

GRADING POLICY

4 quizzes (10 points each)	80
Lab notebook	100
Unknown report	50
Total points	**130**

Quizzes: Quizzes will be taken at the start of class. Extra time will not be permitted for those who are late. There are NO MAKE- QUIZ. Quiz may consist of true/false questions, matching, multiple choices, short-answer questions. Purchase your scantrons (882-E) ahead of time for your quizzes.

MICROBIOLOGY 20:
TENTATIVE LECTURE AND LAB SCHEDULE

WEEK	Dates	Lab Topic	Lab Manual Section
1	Mon Feb 10	Lab Orientation - Locker Check-in	
	Wed Feb 12	Use and Care of a Microscope	1
2	**Mon Feb 17**	**NO CLASS – PRESIDENT DAY**	
	Wed Feb 19	Ubiquity of Bacteria Aseptic Techniques	6 8
3	Mon Feb 24	Observations of Ubiquity of Bacteria and Aseptic Techniques	6,8
	Wed Feb 26	Protozoa	5
4	Mon Mar 3	Fungi	7
	Wed Mar 5	Helminths: Parasitic Worms	slides
5	Mon Mar 10	Smear Preparation Simple Staining	10 11
	Wed Mar 12	Gram staining	14
6	Mon Mar 17	**Quiz 1: Exercises 1, 6, 8, 5 and Helminths** Gram Staining **NOTEBOOK DUE**	14
	Wed Mar 19	Spore Staining	15
7	Mon Mar 24	Acid-Fast Staining	16
	Wed Mar 26	**Quiz 2: Exercises 10, 11, 14, 15, 16** Pure Culture Techniques: Streak Plate Method (Isolation)	9
8	**Mon Mar 31**	**NO CLASS – Cesar Chavez Day**	
	Wed Apr 2	Pure Culture Techniques: Sub culturing	9
	Mon Apr 7 Wed Apr 9	**NO CLASS – SPRING BREAK**	
9	Mon Apr 14	Pure Culture Techniques: Evaluation UV Light: Lethal Effects	9 28
	Wed Apr 16	Observation of UV Light Lethal Effects Effects of Antiseptics: Filter Paper Disk Method	28 32
10	Mon Apr 21	Observation of Effect of Antispetics Effect of Temperature on Bacterial Growth	32 25

		NOTEBOOK DUE	
	Wed Apr 23	**Quiz 3: Exercises 9, 25, 28, 32** Observation of Effects of Temperature	25
11	Mon Apr 28	**Unknown:** Stock Preparation, Gram Staining and Microscopic Morphology Streak Plate Colony Isolation	34 Handout
	Wed Apr 30	**Unknown:** Gram Staining and Cultural Characteristics Working Slant Preparation	35
12	Mon May 5	**Unknown:** Gram Staining of Working Slant Carb fermentation Test, and Catalase Test	36
	Wed May 7	**Unknown:** Results of Carbohydrate Fermentation Test Mixed Acid and Butanediol Fermentation Tests (MR-VP) and Citrate Test	36
13	Mon May 12	**Unknown:** Observation of MR-VP and Citrate Test	36
	Wed May 14	**Unknown:** Starch Hydrolysis H_2S Production (Kligler's Iron Agar)	37 38
14	Mon May 19	**Unknown:** Results of Starch Hydrolysis and H_2S Production (Kligler's Iron Agar) Test Catch up and Final results	37 38
	Wed May 21	Antimicrobic Sensitivity Testing	31
15	**Mon May 26**	**NO CLASS – Memorial Day**	
	Wed May 28	**Quiz 4: Exercises 34-38 and 31** Observation of Antimicrobic Sensitivity Testing **UNKNOWN REPORT DUE**	31
16	**Mon Jun 2**	Clean up Locker Check-out	