From: Stupy, Michael
Sent: Monday, September 07, 2009 10:39 AM
To: Baldwin, Priscilla
Subject: micro 33 Course Outline (M/W)

General Microbiology 33
El Camino Co
Mr. Stupy
Fall 2009
Voice Mail: (310) 532-3670 x5353
Office Hours: M/W- 5:00 - 5:30 pm, T/TH- 1:30 - 2:00 pm, 6:40 - 7:10 pm
Office: NS-112 or LS-130

GENERAL MICROBIOLOGY (Course Overview): (Mon./Wed.)
Required Textbooks:
Microbiology, An Introduction, by Tortora, Funke and Case; tenth edition, 2010.
Benson's Microbiological Applications, by Brown; eleventh edition, 2009.

Optional Textbook:
A Photographic Atlas for Microbiology Laboratory, by Leboffe and Pierce, third ed.,2005

Other Supplies:
In addition to the required textbooks each student must provide a total of seven (7) scantron answer sheets (thin Form 882) for both lab and lecture exams. Also, a small set of colored pencils and a Sharpie pen are required for laboratory exercises.

Attendance:
Attendance in both lab and lecture is required by college regulations and is virtually essential to academic success. I will take roll and any student who misses three (3) class periods may be dropped from the course. Please see me if you have attendance problems.

Withdrawals:
While I hope few individuals will find it necessary to

withdraw, should this option become necessary, it is the responsibility of the student to withdraw officially through the Admissions Office. An automatic grade of "W" will be assigned if you withdraw officially through the Admissions Office, prior to the official drop date. Students who stop attending and do not officially withdraw themselves, should expect to receive an "F" grade.

Objectives of the Course: By the end of the course the student will:

1. Demonstrate a firm knowledge and understanding of the microbial world and its interaction and influence on humans.

2. Describe the basic structure and functional characteristics of microorganisms and understand how they exist in their particular ecological niche.

3. Demonstrate both understanding and the ability to successfully practice aseptic technique in the microbiological laboratory.

4. Be able to perform and acquire thorough knowledge of various staining techniques and biochemical tests used to identify and study bacteria in the laboratory.

5. Develop an appreciation for the measures and procedures available to control microorganisms, both in vitro and in vivo.

6. Develop and understanding of the human immune system and how it functions in host-parasite relationships to protect us from disease.

7. Compare and contrast different diseases of man that are important in the Southern California area, including those that are food borne, air borne, arthropod borne, soil borne and those transmitted by sexual

contact.
-2-

8. Realize the importance of microorganisms to all aspects of human life and
appreciate the role they have played in our basic understanding of many facets of
biology such as recombinant DNA research, genetic engineering, monoclonal
antibodies, gene probes, etc.

9. Have the knowledge to accept his or her role in the spread of human disease and
understand the appropriate measures that can be personally accomplished to halt
the spread of disease, especially if future employment will be in the medical field.

Student Learning Outcomes: Upon completion of this course, students will be able to:
1. Identify types of white blood cells, indicate normal values and analyze abnormal changes of white blood cells for diagnosis of disease or allergic reactions.

Grading Standards for the Course:
A = 90% - 100% Note: Any student failing to attain a course average of 55%
B = 89% - 80% following the second lecture exam may be withdrawn
C = 79% - 65% from the course by this instructor due to insufficient
D = 64% - 55% progress at mid-term.
F = Below 55%

Grading Information:
The lecture and laboratory sections of this class are

integrated; points earned in both areas count equally towards the final grade. Points are obtained as follows:

Lecture
Total Points Possible
3 - Lecture Examinations (100 points each)
300 points
1 - Comprehensive Final Exam
150 points

450 points

Laboratory:
Total Points Possible
11 - Quizzes (10 points each- lowest score dropped)
100 points
5 - Laboratory Demonstrations (2 points each)
10 points
1 - Gram Stain Unknown
10 points
2 - Biochemical Unknowns (15 points each)
30 points
2 - Lab Practicals (50 points each)
100 points
2 - Written Lab Exams (85 points each)
170 points
2 - Lab Notebook Review (15 points each review)
30 points
(Note: Lab Notebook will be turned in to be graded on 450 points
Mid-term and Final Lab Exam days.)

Total Class Points Possible: 900 points

-3-

Exams:
Both the Lecture and Lab written exams consists of

different types of questions such as multiple choice, true-false, matching, short answer and essay. If you are unable to be in class for a test, I must be notified prior to class time and an alternate time may be arranged. There are no make-up's without prior authorization and a make-up exam score may be decreased by 10%. There are no make-up's for lab practicals.
My office phone number is (310) 532-3670 x5353.

Lab Quizzes:
Quizzes are given at the start of lab and will cover information from previous lab exercises as well as the experiments to be completed that day. The highest ten (10) scores will count toward your final grade. There are no make-up's for quizzes missed.
Note: All Lab Manual assignments(experiments) are to be read before you come to lab.

Demonstrations/ Lab Performance:
These will involve different "hands-on" techniques (ie.) staining procedures, that will be performed for the instructor to be graded. There may also be an oral quiz along with the demonstration. Any student who is not properly prepared for each daily laboratory exercise will be asked to leave the class for that day .

Unknowns:
Each student will be given one or more broth cultures that are to be kept uncontaminated during the identification process. The tests to be run will have already been introduced and performed in previous laboratory exercises. The ability to correctly perform lab tests, analyze results and identify unknown bacteria will be required.

Lab Practicals:
These are tests given in lab which are used to evaluate the student's understanding of techniques and theories learned in lab exercises. The ability to perform and analyze lab test results will be graded.

Written Lab Exams:

These will be written exams taken in lab that will test for understanding of the principles and theories learned in lab exercises. These exams will consist of a variety of question formats including multiple choice, true or false, short answer and essay.

Lab Notebook Review:
Each student will turn in their lab manual notebook at the mid-term and final lab exam periods and it will be graded for completeness and neatness (ie.) questions answered and labeled structures, colored drawings, etc. Questions to be answered at the back of the lab manual are posted on the side wall of room.

Disabilities:
If you have a specific learning disability, please contact the Special Resource Center at (310) 660-3295 for documentation and let me know as soon as possible so that we may suitably accommodate your learning needs.

Mission Statement: El Camino College offers quality, comprehensive educational programs and services to ensure the educational success of students from our diverse community.
-4-

General Microbiology 33
Fall 2009
Mr. Stupy
E.C.C.

General Microbiology - Lecture Schedule : (Mon./Wed.)

Date: Week: Subject Material:
Chapters:

8/31	1	Introduction, History, Measurements	1, 3
9/2		Survey of Microorganisms	1
9/7	2	Labor Day Holiday	
9/9		Chemical Principles, Biological Molecules	2
9/14	3	Procaryotic Cells, Bacterial Anatomy	4
9/16		Eucaryotic Cells, Classification	4, 10
9/21	4	Bacterial Groups, Microbial Growth	11
9/23		***Growth Curve, Sterilization*** (second half)	7,6
9/28	5	Exam I	
9/30		Enzymes	5, 2
10/5	6	Metabolism	5
10/7		Bacterial Metabolism	5
10/12	7	DNA, RNA, and Protein Synthesis	5, 8
10/14		Protein Synthesis	8
10/19	8	Microbial Genetics	8
10/21		Microbial Genetics, Genetic Engineering	8, 9
10/26	9	***Mycology***	12
10/28		Exam II	

-5-

General Microbiology 33
Fall 2009
Mr. Stupy
E.C.C.

Lecture Schedule (Mon./Wed.)

Date:	Week:	Subject Material: Chapters:
11/2	10	Fungal Diseases (Ch. 21, 22, 24, 25, 26) 12
11/4		Protozoans 12
11/9	11	Protozoan Diseases (Ch. 21, 22, 24, 25, 26) 12
11/11		Virology 13
11/16	12	Viral Diseases (Ch. 21, 22, 23, 24, 25, 26) 13,19
11/18		***Non-specific Defense Mechanisms*** 16

11/23	13	Exam III
11/25		Specific Defense Mechanisms 17, 18
11/30	14	Specific Defense Mechanisms, Vaccines 17, 18
12/2		Hypersensitivity, Principles of Disease 19, 14
12/7	15	Diseases of the Skin and Respiratory Tract 21, 24
		Bacterial Diseases of the Nervous System 22
12/9		Diseases of Cardiovascular System 23
		Diseases of Digestive System 25
12/14	16	Bacterial Diseases of Urinary and 26
		Reproductive Systems
12/16		Final Lecture Exam: (Dec. 16th, Wed., at 5:30 PM)

*** Denotes material that will be for the next exam.

Note: Final Lecture Exams will consist of 50 points of comprehensive material and 100 points of new material . Two (2) scantron answer sheets are required.

Note: Last day to drop with a "W" grade is Friday, Nov. 20 th.

General Microbiology 33
El Camino Co. Mr. Stupy
Fall 2009

MICROBIOLOGY LAB SCHEDULE (Mon./Wed. Labs)

WEEK LAB EXERCISES

1
8/31 Lab Check-In; 1-Light Microscope; (2,3,4)- Microscope Types (Introduction only)
9/2 7, 9- Aseptic Tech. (Omnipresence of Microbes); 19-Media; 40-Cultural Characteristics

2
9/7 Labor Day Holiday
9/9 22- Pour Plate (Enumeration of Bacteria)

3
9/14 10- Streak Plate (Isolation of Pure Culture); 22-Spread Plate(Enumeration of Bacteria)
9/16 21- Oxygen Requirements; 11- Smear Preparation

4
9/21 15- Gram Stain; 12- Simple Stain
9/23 17- Acid-Fast Stain; 14- Capsule Stain; 13- Negative Stain

5
9/28 16- Spore Stain (Schaeffer-Fulton method); 18- Flagella Stain (Demonstration Slide)
18- Motility Media
9/30 15- Two(2) Gram Stain Unknowns (5-points each); 18- Motility Media (Observe)
8, 24- Inoculate Mold Slide Cultures: (Rhizopus, Aspergillus, Penicillium)
Finish Staining Exercises

6
10/5 8-Yeast (Simple Stain); 24-Mold Cultures:(Rhizopus, Aspergillus, Penicillium) Observe
8- Demo.: Zygospore(Rhizopus), Ascospore(Peziza), Conidiospores (Penicillium)

10/7 37- Disinfectants/ Antiseptics; 36- Antibiotic Sensitivity
59- Microbial Antagonism

7
10/12 37- Disinfectants/ Antiseptics (Observe); 36- Antibiotic Sensitivity (Observe);
59- Microbial Antagonism (Observe)
57- Bacterial Commensalism; 29- Temperature; 31- pH

10/14 57- Bacterial Commensalism (Observe); 29- Temp. (Observe); 31- pH (Observe)
32- Osmotic pressure; 33- Ultraviolet Light

8
10/19 32- Osmotic pressure (Observe); 33- Ultraviolet Light (Observe); Review
10/21 Mid-Term Practicum and Lab Written Exams
-7-

El Camino Co.
Fall 2009
Mr. Stupy

MICROBIOLOGY LAB
SCHEDULE (Mon./Wed. Labs)

WEEK LAB EXERCISE

9
10/26 40- Gelatin Hydrolysis; 42- Starch Hydrolysis; 42- Casein Hydrolysis
44- (Bergey's Manual), 70, 71 *2- Biochemical Unknowns Issued (15 pts each)
10/28 41- Phenol Red Fermentation Broth Tubes; 43- Litmus Milk
44- (Bergey's Manual), 70, 71 * Biochemical Unknowns (Day #2) *

10
11/2 42- Indole Test; 41- Methyl Red-Voges Proskauer Test; 43- Citrate Test
Biochemical Unknowns (Day #3) *
11/4 41- Nitrate Reduction; 43- Hydrogen Sulfide; 42- Urea Hydrolysis
41- Catalase Test; 41- Oxidase Test

11
11/ 9 6- Protozoans, Algae and Cyanobacteria
11/11 6- Protozoans, Algae and Cyanobacteria (repeat);
19- Differential, Selective, Enrichment Media; 70, 71-Blood Hemolysis

12
11/16 70, 71- Gram Positive Cocci Exp. (Day #1) ; 25- Bacteriophage Exp.
11/18 61- Examination of Water (Day #1); 70, 71- Gram Positive Cocci Exp. (Day #2)

13
11/23 61- Examination of Water (Day #2); 70, 71- Gram Positive Cocci Exp. (Day #3)
11/25 61- Exam. of Water (Day #3); 70, 71- Gram Positive Cocci Exp. (Day #4);

14
11/30 60, 64- Milk Microbiology, Food Microbiology

12/2 76- White Blood Cell Exp.; 77- Blood Agglutination

15
12/7 76- White Blood Cell Exp. (Repeat); 77- Blood Agglutination (Repeat)
12/ 9 Final Practicum and Lab Written Exams

16
12/14 Lab Clean Up and Check Out Keys; Finish Lecture Material
12/16 FINAL LECTURE EXAM
-8-

MICROBIOLOGY LABORATORY RULES

1. Dress:
Students must wear a lab coat, smock, extra shirt, or some type of garment over their street clothes while working in lab. This garment must be kept in the lab to prevent spreading of contaminants to other areas. Shoes, not sandals, must be worn in the interest of safety.

2. Eating,Drinking, Smoking:
Not permitted in lab to prevent contamination and possible health risk.

3. Hair:
Long hair must be tied or worn so that it does not swing forward over the work bench. Lighted Bunsen burners and microbial cultures present obvious health hazards to long hair.

4. Careful Aseptic Technique:
Treat all microbes as potential pathogens (disease causing organisms). Always use good aseptic technique.

5. Spills:
All bacterial cultures must be treated as if pathogenic. Report all spills or other potentially contaminating accidents to the instructor immediately so that

proper disinfecting measures can be taken.

6. Disinfection of Bench Tops:
Each student is required to thoroughly disinfect his or her bench top BEFORE and AFTER each day in the laboratory.

7. Bench Top Space:
All backpacks, books and papers other than the lab manual must be kept off the lab bench during laboratory work. Table space is limited so you will need to clear a work area.

8. Visitors:
Visitors are discouraged from visiting class, as they may not be familiar with bacteria and contamination problems. Go outside to socialize.

9. Lab Activity:
Lab activity will only be during the scheduled class hours and always under supervision of the instructor.

10. General Clean-Up:
Each student is required to clean up his or her personal station and dispose of sterilized media or cultures before leaving class.
a. Remove all marks or labels on any glassware such as petri dishes or test tubes before discarding.
b. Place all used media and bacterial cultures in the labeled used media area to be sterilized.
c. Remove old sterilized media in test tubes from previous lab, using test tube brushes, and store cleaned test tubes and caps in metal containers on disposal cart.
d. Before storing the microscope, clean the oil immersion objective with lens tissue to remove oil.
e. Place disinfectant on table top work area at the end and start of lab.
f. Thoroughly wash hands with soap and water at the end of each lab period.

11. Be Prepared:

a. Students are expected to read the laboratory procedures and be prepared before attending lab or they may be asked to leave class for that day.