School: Kapiolani Community College

Microbiology 130

Spring 2005

INSTRUCTOR : Dr. John M. Berestecky

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TEXT: Microbiology: An Introduction; eighth edition

Tortora, Funke and Case

The Benjamin/Cummings Publishing Co., Inc. 2004. **(T)**

OPTIONAL TEXTS: Study Guide for Microbiology: An Introduction; eighth edition. Berdall R. Funke; The Benjamin/Cummings Publishing Co., Inc. 2004.

ADDITIONAL READINGS: 1.) Microbiology Readings: Microbiology 130 **(MR).** Most of these readings are at the web site. The booklet is also on reserve at Lama Library. Other readings may be assigned as appropriate.

2.) Microbiology Study Guides at the World Wide Web site. These are copies of old multiple choice exams and it is highly recommended that you try to work through the questions. It is important that you not only know which responses are right and which are wrong, but that you also understand why the responses are right or wrong

WORLD WIDE WEB : A World Wide Web site has been developed for this course. A number of important resources, including study guides and lecture outlines can be found at this address:

http://www2.hawaii.edu/~johnb/micro

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SECTION: 33201 MEETING TIME: M, W, F 11:00-11:50 AM `Iliahi 206

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1/10	Introduction and History	Chapter 1 **(T)** ;
		"A Biologist Whose Heresy Redraws the Earth's Tree of Life" **(MR)**
1/12	Basic properties of cells	Chapter 4 **(T)** ;
		"How a Mysterious Disease Laid Low Europe's Masses" **(MR)** ;
		"Profiles in Chinatown Courage" **(MR)** ;
		"Interview: David Stannard" **(MR)**
1/14		
1/17	**Martin Luther King Day - Holiday**	Chapter 4 **(T)**
1/19	Basic properties of cells	Chapter 4 **(T)**
1/21		
1/24	Procaryotic cells	Chapter 4 **(T)** ;
	(Skin and Eye Infections)	***(Chapter 21 (T))***
1/26	Eucaryotic cells	Chapter 4 **(T)** ;
	(Nervous System Infect.)	"The Perils of Treading on Heredity" **(MR)**
		(Chapter 22(T))
1/28		
1/31	Basic chemistry	Chapter 2 **(T)**
2/2	Microbial metabolism	Chapter 5 **(T)** ;
		Appendix C **(T)**
2/4		
2/7	Microbial metabolism	Chapter 5 **(T)**
	(Cardiovascular System infections)	***(Chapter 23 (T))***
2/9	Microbial metabolism	Chapter 5 **(T)** ;
2/11		
2/14		***Outline Due-Chap.***

		21,22,23
2/16	**FIRST MIDTERM EXAM - covers thru metabolism**	
2/18	Microbial genetics	Chapter 8 **(T)** ;
		"The Cruel Logic of Our Genes" **(MR)** ;
		"James Watson and the Search for Biology's 'Holy Grail'" **(MR)**
2/21	**President's Day - Holiday**	
2/23	Microbial genetics	Chapter 8 **(T)**
	(Respiratory system infections)	***(Chapter 24 (T))***
2/25		
2/28	Microbial genetics	Chapter 8 **(T)**
3/2	Microbial genetics	Chapter 9 **(T)**
	Recombinant DNA and Biotech	***(Chapter 25 (T))***
	(Digestive system infect.)	
3/4		
3/7	Microbial growth	Chapter 6 **(T)**
3/9	Control of microbes	Chapter 7 **(T)**
	Antimicrobial drugs	Chapter 20 **(T)**
	(Urinary and reproductive system infections)	***(Chapter 26 (T))***
3/11		
3/14	Viruses	Chapter 13 **(T)**
	Cancer	"Taming the Wily Rhinovirus" **(MR)**
	Fungi and protozoa	Chapter 12 **(T)**
3/16	Viruses and Cancer	***Outline Due-chap 24,25,26***
3/18	**SECOND MIDTERM EXAM**	
3/21	**Spring Break**	
3/23	**Spring Break**	

3/25	**Spring Break**	
3/28	Infectious disease epidemiology	Chapter 14 **(T)**
		Chapter 15 **(T)**
	Pathogenic mechanisms of parasites	Chapter 16 **(T)**
	Host-parasite relationships	
3/30		
4/1		
4/4	Pathogenic mechanisms of parasites	Chapter 15 **(T)**
		Chapter 16 **(T)**
	Host-parasite relationships	
4/6	Immune system	Chapter 16 **(T)**
	Antibodies	Chapter 17 **(T)**
4/8		
4/11	Immune system	Chapter 17 **(T)**
	Antibodies	Chapter 18 **(T)**
4/13	Cellular immune mechanisms	Chapter 17 **(T)**
		Chapter 18 **(T)**
4/15		
4/18	Immunopathology	Chapter 19 **(T)**
	Allergy and autoimmunity	"Bloodstream Follies" **(MR**);
	Immunodeficiency and AIDS	"My Life Stalking AIDS" **(MR)** ;
		"The Human Mouse" **(MR)** ;
		"Uganda: Land Beyond Sorrow" **(MR)** .
4/20	Immunopathology	Chapter 19 **(T)**
	Allergy and autoimmunity	"Bloodstream Follies" **(MR**);
	Immunodeficiency and AIDS	"My Life Stalking AIDS" **(MR)** ;
		"The Human Mouse" **(MR)** ;
		"Uganda: Land Beyond Sorrow" **(MR)** .

4/22		
4/25	**Last day to turn in extra credit!**	
	THIRD MIDTERM EXAM - OPEN BOOK COVERS CHAPTERS 21 - 26 TORTORA ET.AL.	
4/27	Sexually transmitted disease	Chapter 26 **(T)**
	Skin and eye infections	Chapter 21 **(T)** ;
		"Tiny Tick, Big Worry" **(MR)**
4/29		
5/2	Nervous system infections	Chapter 22 **(T)** ;
	Respiratory infections	pg 68 -69 **(L)**
		Chapter 23 **(T)** ;
		"Septic Shock" **(MR)** ;
		"Tuberculosis Today" **(MR)**
5/4	Blood and Systemic infections	Chapter 24 **(T)**
		Chapter 25 **(T)**
	Food and waterborne infections	

EXAMINATIONS:

Three midterm exams and a final exam are scheduled for a total of 250 points. Each midterm will be worth 50 points (20% of the total course points). The final exam will be worth 100 points (40% of the total course points). These exams will be machine graded and all students must bring a No. 2 pencil to the exams for marking the test forms.

Exams will cover the assigned reading as well as the lecture content.

Only one (1) make-up exam will be given on the last scheduled day of class (5/4/05). The make-up exam will cover the first 2/3's of the semester and any student who misses either the **first** or the **second** midterm *for good cause** may take it. **Anyone who misses two or more midterms should withdraw from the course** as there is no way to make up two or more exams. If you miss the final exam *for good cause** you must make arrangements with the instructor to take the make-up exam.

*Good cause means that you have discussed the pending absence with the instructor and have received permission to miss the exam; or, that you have a medical excuse with a doctor's note.

FINAL EXAM: Monday, May 9 @ 10:00 - 12:00 noon

GRADING: Your final letter grade will be determined by your standing on a class curve of all final scores. In order to score a "C" in this course you must have accumulated 150 points (60% of 250 possible points). An "A" grade represents **excellence** in understanding and performance and generally the top 10% of the class earn an "A". The next 15% of the class usually scores a "B" grade which represents good, above average understanding and performance.

OBJECTIVES:

1. The student shall study and learn the basic vocabulary of microbiology

2. The student shall study and learn how life is organized at the cellular and subcellular levels

3. The student shall study and learn the fundamental biochemistry of cellular metabolism

4. The student shall study and learn the basic principles of molecular genetics as they relate to cell division, mutation, genetic engineering, and antibiotic resistance

5. The student shall study and learn the principles of sterilization, disinfection and aseptic technique as well as the principles of antibiotic therapy

6. The student shall study and learn the principles of the host parasite relationship both in health and in disease

7. The student shall study and learn the components of the human immune system and how they interact in generating an immune response

8. The student shall study the major and the common infectious diseases of humans

9. The student shall become literate in basic microbiology

The Math / Science Department policy on WITHDRAWAL and INCOMPLETE grades is as follows:

1. WITHDRAWALS - After the last day for withdrawals (March 18, 2005), the instructor will sign withdrawals only in cases of extreme or unusual circumstances. Grade

related excuses are NOT acceptable reasons for withdrawing from the course after the deadline.

2. INCOMPLETES - Students must initiate this process and present the "Request for Incomplete" form to the instructor prior to the last day of instruction. An " I " grade will only be given to students who are achieving passing grades and who are very close to completing the course. In addition, such students must have a very good reason for not being able to complete all the course work on time. Incomplete grades must be made-up by the deadline in the following semester; if they are not made-up by the deadline they normally revert to an "F".

SERVICE LEARNING OPTION: You may receive credit for performing a community service project that reinforces and applies some of the principles of microbiology you are learning in this course. This Service Learning Project is worth 50 points and the grade you earn in the project will replace your lowest midterm exam score.

Suitable Service Learning projects can be chosen by first discussing your interests and ideas with me or by discussing your interests with the counselors at the Service Learning Office and looking over their listing of placement opportunities. HIV/AIDS prevention and education as well support for people infected with HIV and opportunistic pathogens are obvious areas of service for students in this class and there are several opportunities available with agencies that work in these areas. There are also teaching and tutoring opportunities for high school and intermediate school students about infectious disease and HIV as well as other aspects of microbiology. This type of teaching experience would be especially important for those of you who plan to be teachers since 40 hours of field experience is required for admission to the UH College of Education.

A successful project will involve at least 20 hours of service. You are required to keep a ongoing journal in which you describe and analyze your service learning experience. In this journal you should attempt to connect the service learning experience to your microbiology class. All projects must begin by February 18, 2005.

EXTRA CREDIT:

You may choose to write one critical review research paper, 10 typed pages long (10 or 12 point font, double spaced) for a maximum of 10 extra points. This paper is to be a critical, researched review of a recent **SCIENTIFIC AMERICAN** feature article dealing with some aspect of microbiology, immunology or infectious disease. These **SCIENTIFIC AMERICAN** articles are the long feature articles not the short news review articles. The feature articles all conclude with a bibliography list for reference or further reading which you may use as a starting point for your research. If you have any doubt about the appropriateness of an article, please check with me!

In your review of the article, please describe the central theme and any controversies or problems that are discussed or developed in the article. What are the theories supporting

these concepts? What are the hypotheses and how are they tested? What are the results of these tests or experiments? You will have to go back to the original scientific literature for some of this information -- this may mean a trip to Hamilton Library or the internet to look up some of the journals. Describe the consequences of the research described -- both the good and the bad.

These extra credit papers are due no later than April 25, 2005. Please attach a photocopy of the original Scientific American article to your paper when you hand it in.