

MICROBIOLOGY

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SUMMER QUARTER, 2008

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Office: EDS 215 P, Hrs: MWF, 1:15-2:30 PM

SYLLABUS

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COURSE OBJECTIVES: To learn about microorganisms, including their anatomy, physiology, taxonomy, genetics, how to control their growth, their medical significance, their epidemiology, the body's protective responses to their challenge (both non-specific and immune), exogenous antimicrobial agents, and etymology related to all these subject.

LABORATORY SKILLS TO BE LEARNED: oil immersion microscopy, differential staining, sterile technique, media preparation, single colony isolation, serial dilution, use of selective and differential media, microbial enumeration (photometrically, plate count, membrane filtration), inhibition assay. See *Lab Notebook Procedure* for important details.

REQUIRED TEXT: Bauman, Robert *Microbiology With Disease by Taxonomy*, 2nd Ed, Pearson educational (2007)

OPTIONAL TEXTS: Borror *Dict. Of Word Roots & Comb Forms* Mayfield Pub. (1960)

SCHEDULE: Lecture is 10:00 to approximately 11:25, Laboratory from 11:35 to 1:15.

This calendar is an approximation, and may be adjusted according to the rate at which material is successfully presented and mastered. **Assigned readings:** page numbers in lower left boxes.

READINGS IN TEXT ARE IN LOWER LEFT OF DUE DATE.

NOTE: Pop pre-lab quizzes will be given.

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|--|---|--|
| 7/7 Introduction to Course Early History of Microbiology Spontaneous Generation? 1-24 | 7/9 (Review Chemistry on your own) Germ Theory of Disease Microscope History, Function & Stains Chem: 25-54, Microscope: 93-112 | 7/11 Lab First: Prepare media Prokaryotic Anatomy I: Capsules, Flagella, Pili 55-65 |
| 7/14 Prokaryotic Anatomy II: Cell Wall Structure, Sporulation 65-92 | 7/16 Lab first, middle and last...: Bacterial Growth Curve Enzymology, Metabolism, Glycolysis 123-138 | 7/18 Microbial Fermentation Requirements for Microbial Growth 139-169, esp 146-148 (ferm), 165-195 |
| 7/21 Microbial Control: Physical Means 261-276 | 7/23 Microbial Control: Chemical Means (bring in anti-bacterial agents to test) 276-314 | 7/25 Microbial Genetics 196-260 |
| 7/28 Microbial Taxonomy Intro to Gram positive bacteria <i>Staphylococcus, Streptococcus</i> 315-342; 529-541 | 7/30 Spore forming Gram positive bacteria: <i>Bacillus, Clostridium,</i> 542-552 | 8/1 Lab First: Blood Agar results Take home sterile culture tubes MIDTERM EXAM |
| 7/4 Midterm returned, discussed. Gm + bact. cont: <i>Mycobacteria</i> Gram negative bacteria: <i>Neisseria,</i> <i>Enterobacteriaceae et cetera</i> 553-593 | 8/6 Lab First: TSI slant prep Mycoplasmas, Rickettsias, Chlamydias, Spirochetes, Vibrios 594-621 | 8/8 Medically Important Fungi Eukaryotic Parasites 622-647; 648-678 |
| 8/11 Viruses I: DNA Viral Diseases: Pox viruses, Herpes, CMV Papilloma, Hepatitis B 365-403; 680-702, 611-620 | 8/13 Viruses II: RNA Viral Diseases Rhino-, Polio-, Encephalitis, Rubella HIV, Measles, Rabies, Influenza 703-741 | 8/15 Diseases and Epidemiology Host Defenses: Non-specific and specific 404-436; 437-460 |
| 8/18 Immunology: Mech. of the Immune Response, Problems 461-528 | 8/20 Lab 1st: Count plaques, calc. titer FINAL EXAM So long, it's been good to know you. KEEP IN TOUCH! | QUIZ I |
| | | QUIZ II |
| | | QUIZ III |
| | | QUIZ IV |

Quizzes (given at 11:00) and exams will include material from both lecture and lab exercises. Grades will be assigned according to your position on a class histogram of cumulative points earned on quizzes, notebooks and exams. The class midline approximates a B. See separate handout on suggestions for how to succeed in this course.

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