

MICROBIOLOGY- BIOLOGY 202 LABORATORY-2012

COURSE DESCRIPTION: An introduction to the study of microorganisms and their relationship to man. Lab work microscopic study, application of aseptic techniques, culturing microbes and diagnostic testing.

INSTRUCTOR: Elma Severson

OFFICE: NSC 108

OFFICE HOURS: By Appointment

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LECTURE: 9:00-9:50AM on M,W,and F in NSC 105 with Dr. C. Lura

LAB: 4:00-6:00 pm on Wednesdays in NSC 128

LAB MANUAL: Benson's Microbiological Applications, 10th edition Short Version

Laboratory Manual in General Microbiology- Alfred E. Brown

GRADING: Grading is based on a standard college curve, where students earn a grade based on the percent of the total points possible they obtain. The laboratory component of this course consists of 200 points (15 labs @ 5 points each (2 points for attendance and participation and 3 points for lab reports. Quizzes will be given in addition to lab reports or in place of), five lab exams @ 15 points each, 10 points for individual projects, and two unknowns @ 20 points each. Laboratory points are added to lecture points (400) to obtain the total points possible for the course (600). There is one week grace period to make-up any missed lab exam. Any missed lab exam not made within the allotted time will be given a zero. Due to the nature of the lab, students are not able to make up labs with the exception of lab work for the unknown organisms project. At which time lab work can be arranged with the lab instructor. Letter grades are assigned based on the following criteria:

A= 90-100% of the total points

B= 80-89% of the total points

C= 70-79% of the total points

D= 60-69% of the total points

F=<60% of the total points

TENTATIVE LABORATORY OUTLINE

| DATE | TOPIC | LAB# |
|------|--|-------|
| 1/17 | Martin Luther King Day -College closed | |
| 1/19 | Brightfield Microscopy | 1,4 |
| | Microscope Measurement | |
| 1/26 | Aseptic/Pure Culture Techniques | 8,9 |
| 2/2 | Smear Preparation | 10 |
| | Simple Staining/ Gram Stain | 11,14 |
| | Spore Staining/ Acid Fast Staining | 15,16 |
| 2/9 | LAB EXAM I | |
| | Protozoans, Algae and Cyanobacteria | 5 |
| | Unknown organism Protocol | |
| 2/16 | Enumeration of Bacteria: The Standard | 20,18 |
| | Plate Count. Culture Media Preparation | |
| | Temperature Effects on Growth | 26,28 |
| | pH and Microbial Growth | |
| 2/23 | LAB EXAM II | |
| | Antimicrobial Sensitivity Testing: | |
| | The Kirby Bauer Method | 33 |
| 3/2 | Evaluation of Antiseptics: | |
| | The Filter Paper Disc Method | 34 |

| | | |
|------|--|--------|
| | Effectiveness of Hand Scrubbing | 35 |
| 3/9 | Morphological Study of Unknown Bacterium | 36 |
| | Cultural Characteristics | 37 |
| 3/16 | Spring Break- College closed | No Lab |
| 3/23 | LAB EXAM III | |
| 3/30 | Open Lab: Unknown Organism work-up | |
| 4/6 | Physiological Characteristics: | |
| | Oxidation and Fermentation Test | 38 |
| | Hydrolytic Reaction | 39 |
| 4/13 | Physiological Characteristics: | |
| | Biochemical Test | 40 |
| | Use of Bergey's Manual | 41 |
| 4/20 | LAB EXAM IV | |
| | Staphylococci: Isolation & ID | 52 |
| 4/27 | Streptococci: Isolation & ID | 53 |
| | Gram Negative Intestinal Pathogens | 54 |
| 5/4 | LAB EXAM V | |
| | Unknown organisms Due | |
| | Written Reports for Extra Credit | |

