

2015

Biology 123 Microbiology Summer 2015

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MICROBIOLOGY: A COURSE OVERVIEW**SUMMER 2015**

Biology 123 – Microbiology is a transfer level survey course designed to examine a broad spectrum of the microbial world. Special attention is given to the study of bacteria and viruses with emphasis given to structure, physiological processes, physical and chemical control, immune mechanisms, disease processes and practical applications. Required laboratory exercises stress basic techniques for handling, examining, and identifying microbial specimens.

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TEXTBOOK: Microbiology with Diseases by Body System; Robert W. Bauman;
 Pearson/Benjamin Cummings; San Francisco, CA 2008 or
 4th Custom Edition for Parkland College

LAB MANUAL: Techniques in Microbiology: A Student Handbook; Custom Edition for
 Parkland College; Pearson/Benjamin Cummings; San Francisco, CA 2007

Either shrink wrapped with the text, or purchased separately – required.

OBJECTIVE MANUAL: Stipes Publishing

SAFETY GOGGLES: **Required by ALL** students, may be purchased at a nominal fee at the
 Parkland College Bookstore.

TESTS:**A. Type of Tests:**

Lecture materials will be evaluated using a series of objective quizzes.

Laboratory exercises are evaluated using a series of practical examinations and a separate laboratory write- up for each exercise.

A synthesis examination (Final) is required and is given **only** during the final examination period. This test **cannot** be repeated.

B. Grading Criteria:

| | |
|--|------------|
| Module C-1 through C-14 Written Examinations | 275 |
| Synthesis Examination (Final) | 75 |
| Lab Practical 2 (Morphological Unknown) | 20 |
| Lab Practical 3 (Eucaryotic Microorganisms) | 20 |
| Lab Practical 4 (Biochemical Unknown) | 30 |
| Written Laboratory Exercises | <u>130</u> |
| TOTAL POINTS | 550 |

C. Grading Standards:

A = 495 - 550

B = 440 - 494

C = 385 - 439

D = 330 - 384

F = BELOW 330

TESTING CENTER HOURS:

To Be Announced

HOMEWORK / READING ASSIGNMENTS:

The lecture portion of Biology 123 – Microbiology is divided into fourteen (14) modules. You will receive objectives for each module. Past history shows us that a student should expect to spend 3 -5 hours per week outside the class preparing course materials. This estimate varies greatly with the individual student.

ATTENDANCE and ABSENCES:**Lecture:**

Students are expected to attend all lecture sessions of the class. You will be held responsible for all information given during lecture. If you miss a session, please call your instructor for an excused absence, otherwise you will not be given a quiz extension. **Cell phones and texting are not allowed in lecture or lab.**

Lab:

All laboratory sessions are required. Cultures are issued, directions given, and discussions of previous laboratories are included in these sessions. The time will vary greatly from week to week.

LAB MAKEUPS ARE NOT ALLOWED.

Tardiness beyond 5 minutes will result in loss of participation in lab and A MAKEUP WILL NOT BE ALLOWED!

A penalty of one point per day will be assessed for late laboratory assignments.

LABORATORY WARNING:

A small number of laboratory tests performed in Biology 123 use chemicals which if handled carelessly are potentially harmful to pregnant women. If you are pregnant or become pregnant during the semester in which you are taking Microbiology, notify your laboratory instructor immediately. The tests will be performed by others and the results given to you.

AMERICAN DISABILITIES ACT:

If you feel you have a disability for which you may need an academic accommodation (including special testing, auxiliary aids, non-traditional instructional formats), please inform the instructor as soon as possible and / or contact the following for assistance:

Cathy Robinson – Director
 X 148
 353-2082
crobinson@parkland.edu

CENTER for ACADEMIC SUCCESS:

If you find yourself needing assistance of any kind to complete assignments, stay on top of readings, study for tests, or just to stay in school, please contact one of the following staff at the Center for Academic Success:

Anita Taylor
 D 120
 353-2005
ataylor@parkland.edu

Sue Schreiber
 D 120
 351-2441
sschreiber@parkland.edu

You may also email the CAS at:

centerforacademicsuccess@parkland.edu

EVALUATION:

All students will be asked to complete an Instructor and Course Evaluation at the completion of BIO 123.

MICROBIOLOGY
Tentative Lecture Syllabus

| START | MODULE | TOPIC |
|-------------|----------------------------|---|
| 6/15 | C-1 | Introduction – Microscopy |
| 6/17 | C-2 | Prokaryotes, Eucaryotes Growth, Classification |
| 6/22 | C-3 | Biochemistry, Metabolism |
| 6/24 | C-4 | Genetics |
| 6/29 | C-5 | Viruses |
| 7/01 | C-6 | Disinfection, Sterilization |
| 7/06 | C-7 | Antimicrobial Drugs |
| 7/08 | C-8 | Host-Microbe Interactions, Epidemiology Immunization |
| 7/13 | C-9 | Functional and Dysfunctional Immunity |
| 7/15 | C-10 | Skin Infections |
| 7/20 | C-11 | Upper and Lower Respiratory Infections |
| 7/22 | C-12 | Oral, Gastrointestinal Tract Infections |
| 7/27 | C-13 | Urinary, Genital, and Reproductive Infections |
| 7/29 | C-14 | Nervous System, Circulatory Infection |
| 8/05 | LAST DAY OF CLASSES | |

MICROBIOLOGY
Tentative Laboratory Syllabus

| WEEK OF: | LABORATORY EXERCISE | LAB # |
|----------|---|----------------------|
| 6/15 | Isolation of Organisms from the Environment Broth Culture Agar Slant Culture Microscopy | 1 2 3 |
| 6/22 | Staining Techniques Isolation of Bacteria | 4 5 |
| 6/29 | Antimicrobial Susceptibility Testing Morphological Unknown PRACTICAL – Gram Stain | 6 |
| 7/02 | NO CLASS – JULY 4 HOLIDAY | |
| 7/06 | Morphological Unknown DUE Eucaryotic Microorganisms (Mycology & Parasitology) Issue Biochemical Unknown | 7, 8 |
| 7/13 | EXAM on Eucaryotic Microorganisms Starch Hydrolysis Casein & Gelatin Hydrolysis Hemolysis Throat Culture | 9 10 11 20 |
| 7/20 | Sugar Tube Fermentation Hydrogen Sulfide Production Respiration | 12 13 14 |
| 7/27 | IMVIC Reactions Urea Hydrolysis Eosin Methylene Blue Agar Mannitol Salt Agar | 15 16 17 18 |
| 8/04 | Biochemical Unknown Due | |

MICROBIOLOGY – Tentative Test Deadline

| UNIT | QUIZ DATES |
|-------------------|-------------------|
| C 1 | 6/17 6/18 |
| C 2 | 6/22 – 6/23 |
| C 3 | 6/24 – 6/25 |
| C 4 | 6/29 – 6/30 |
| C 5 | 7/01 – 7/06 |
| C 6/7 | 7/09 – 7/13 |
| C 8 | 7/14 – 7/15 |
| C 9 | 7/16 – 7/20 |
| C 10 | 7/21 – 7/22 |
| C 11 | 7/23 – 7/27 |
| C 12 | 7/28 – 7/29 |
| C 13 | 7/30 – 8/03 |
| C 14 | 8/04 – 8/05 |
| FINAL EXAM | 8/06 |

MICROBIOLOGY
Points Possible

QUIZZES

| QUIZ | TOTAL POINTS POSSIBLE |
|--------------|--------------------------|
| C1 | 15 |
| C2 | 30 |
| C3 | 25 |
| C4 | 15 |
| C5 | 20 |
| C6/7 | 30 |
| C8 | 20 |
| C9 | 20 |
| C10 | 15 |
| C11 | 20 |
| C12 | 25 |
| C13 | 20 |
| C14 | 20 |
| TOTAL | 275 |

LAB PRACTICALS

| PRACTICAL | TOTAL POSSIBLE POINTS |
|-----------------------|-----------------------|
| Morphological Unknown | 20 |
| Eukaryotes | 20 |
| Biochemical Unknown | 30 |
| TOTAL | 70 |

LAB REPORTS

| LAB | | TOTAL POINTS POSSIBLE |
|--------------|------------------------------|--------------------------|
| 1 | Organisms in the Environment | 5 |
| 2 | Broth and Slant Culture | 10 |
| 3 | Microscopy | 10 |
| 4 | Staining Techniques | 10 |
| 5 | Isolation of Bacteria | 10 |
| 6 | Antibiotic Susceptibility | 5 |
| 7 | Fungi | |
| 8 | Parasitology | |
| 9 | Starch Hydrolysis | 5 |
| 10 | Casein & Gelatin Hydrolysis | 10 |
| 11 | Hemolysis | 5 |
| 12 | Sugar Fermentations | 10 |
| 13 | Hydrogen Sulfide Production | 5 |
| 14 | Respiration | 15 |
| 15 | IMViC Reaction | 10 |
| 16 | Urea Hydrolysis | 5 |
| 17 | EMB | 5 |
| 18 | MSA | 5 |
| 20 | Throat Culture | 5 |
| TOTAL | | 130 |

FINAL

| TOTAL POSSIBLE POINTS |
|-----------------------|
| 75 |