MICROBIOLOGY 101
GENERAL MICROBIOLOGY
SPRING 2005

COURSE GREEN SHEET

I. INSTRUCTOR:
John Boothby, Ph.D.
Office: DH 644
Phone: (408) 924-4850 (Office)
(408) 924-4900 (Dept Office)
jboothby@email.sjsu.edu
Office hours: Tu 2:30-3:30
W 2:30-3:30
By appointment

II. COURSE DESCRIPTION
The fundamental principles of microbiology will be presented in a
lecture/laboratory format. The emphasis of the course will be on basic principles aimed at
developing a conceptual framework for various aspects of the field of microbiology
including comparative cytology and laboratory techniques. Lectures will be in DH 135
MW 9:30-10:30. Enrollment and attendance at two 3-hour laboratories per week will be
required. Biology 1, 2 and 3 (with a C or better), Biology 6, and Chemistry 8 or 112A are
prerequisites for the course. Proof of completion of Biology 1, 2, 3 and 6, and Chemistry 8
or 112A will be required during the first week of your laboratory section meetings to avoid
being dropped from the course. Four units.

III. REFERENCES

Spartan Bookstore/Amazon:
Microbiology
Prescott (6th edition)
McGraw Hill 2005

Biology Students Association:
Microbiology 101: Laboratory Manual
Grilione, Rech & Boothby 2005

Microbiology 101: Lecture Handouts
Boothby Spring 2005
IV. EXAMINATIONS AND GRADES

Lecture: There will be 3 examinations for the lecture portion of the course. All examinations will be comprehensive although topics under current discussion will be emphasized. The material covered on examinations may be from lecture, from the required texts, from laboratory exercises/discussions, and from any outside reading.

Examinations will be graded and returned for review during the laboratory period within 10 days. All examinations will be retained by the instructor, but will be available for review during office hours or by appointment. All materials will be discarded 30 days after the end of the semester. No late examinations will be accepted without advance consent of the instructor. Makeup examinations for those obtaining advanced consent may be oral or written at the discretion of the instructor. Any examination may be submitted for regrading, if incorrectly scored, at the request of the student within 1 week of their return for review. No changes in test scores will be made after that time.

A SCANTRON FORM 886 will be required for each examination. Scores from each examination will be weighted (see below) in computing the lecture letter grade.

<table>
<thead>
<tr>
<th>EVALUATION</th>
<th>WEIGHT</th>
<th>DATE</th>
<th>TIME</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exam I</td>
<td>25%</td>
<td>W (3/23)</td>
<td>9:30-10:20</td>
</tr>
<tr>
<td>Exam II</td>
<td>35%</td>
<td>W (4/27)</td>
<td>9:30-10:20</td>
</tr>
<tr>
<td>Exam III (Final)</td>
<td>40%</td>
<td>Tu (5/24)</td>
<td>7:15-9:30</td>
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</tbody>
</table>

Laboratory Grade: Laboratory instructors will determine the letter grade for the laboratory portion of the course. Each instructor will explain their grading criteria during the first meeting of each laboratory section.

Final Course Grade: Letter grades from the lecture (50%) and the laboratory (50%) portions of the course will be used to determine a course letter grade.

V. DROPS:
University and Department guidelines require a serious and compelling reason to drop a course. Grades, alone, do not constitute reason to drop a course.

VI. LAB FEE
A lab fee is charged for this class at the time of registration.
<table>
<thead>
<tr>
<th>LECT #</th>
<th>TOPICS COVERED</th>
<th>TENTATIVE DATE</th>
<th>REFERENCE READING</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Greensheet Course organization</td>
<td>W (1/25)</td>
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<tr>
<td>2</td>
<td>Discovery of microbes</td>
<td>M (1/31)</td>
<td>Chapt 1</td>
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<tr>
<td>3</td>
<td>Microscopy &amp; Flow Cytometry Cell size/scales ((\mu m, mm, cm))</td>
<td>W (2/2)</td>
<td>Chapt 2</td>
</tr>
<tr>
<td>4</td>
<td>Investigation of Microbes Pasteur &amp; Koch</td>
<td>M (2/7)</td>
<td>Chapt 1</td>
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<tr>
<td>5</td>
<td>Cultivation of microbes Microbial media</td>
<td>W (2/9)</td>
<td>Chapt 5</td>
</tr>
<tr>
<td>6</td>
<td>Assimilatory metabolism</td>
<td>M (2/14)</td>
<td>Chapt 8</td>
</tr>
<tr>
<td>7</td>
<td>Dissimilatory metabolism Nutritional classification of microbes</td>
<td>W (2/16)</td>
<td>Chapt 9/28</td>
</tr>
<tr>
<td>8</td>
<td>Microbial Classification Kingdoms &amp; Domains Dichotomous key</td>
<td>M (2/21)</td>
<td>Chapt 19</td>
</tr>
<tr>
<td>9</td>
<td>Symbiosis Terms &amp; Concepts Microbial Culture &amp; Enrichement</td>
<td>W (2/23)</td>
<td>Chapt 28/34/37</td>
</tr>
<tr>
<td>10</td>
<td>Protista I Kingdom organization/cell structure</td>
<td>M (2/28)</td>
<td>Chapt 4</td>
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<tr>
<td>11</td>
<td>Protista II Algae</td>
<td>W (3/2)</td>
<td>Chapt 26</td>
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<td>12</td>
<td>Protista III Protozoa</td>
<td>M (3/7)</td>
<td>Chapt 27/40</td>
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<tr>
<td>13</td>
<td>Fungi I Kingdom organization/cell structure</td>
<td>W (3/9)</td>
<td>Chapt 25</td>
</tr>
</tbody>
</table>
14  Fungi II  
    Lower fungi  
    M (3/14)  
    Chapt 25

15  Fungi III  
    Higher fungi  
    W (3/16)  
    Chapt 25/40

16  Procaryotae I  
    Kingdom organization  
    /cell structure/recombination  
    Elemental cycles  
    M (3/21)  
    Chapt 3/10

18  Exam I  
    W (3/23)  
    --

19  Procaryotae II  
    Antimicrobials  
    M (4/4)  
    Chapt 7

20  Procaryotae III  
    Bacterial quantification  
    Growth curves/generation time  
    W (4/6)  
    Chapt 6

21  Eubacteria I  
    Photosynthetic bacteria  
    Giding Bacteria  
    Prosthecate bacteria  
    Spirochetes  
    Spirilla  
    M (4/11)  
    Chapt 21-24

22  Eubacteria II  
    Vibrios  
    Pseudomonads  
    Acetic acid bacteria  
    Enterics, etc.  
    W (4/13)  
    Chapt 21-24

23  Eubacteria III  
    Sporeformers  
    Micrococci/Staphlococci  
    M (4/18)  
    Chapt 21-24
<table>
<thead>
<tr>
<th>Day</th>
<th>Topic</th>
<th>Day Code</th>
<th>Chapter(s)</th>
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<tr>
<td>24</td>
<td>Eubacteria IV</td>
<td>W (4/20)</td>
<td>Chapt 21-24</td>
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<td></td>
<td>Lactic acid bacteria</td>
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<td></td>
<td>Actinomycete line</td>
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<td>Chlamydiases/Rickettsiases</td>
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<td>Mycoplasmas</td>
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<td>Archaebacteria</td>
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<td>Characterization of group</td>
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<td></td>
<td>Methanogenic archaebacteria</td>
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<td>Extremophilic archaebacteria</td>
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<td>28</td>
<td>Viruses I</td>
<td>W (5/4)</td>
<td>Chapt 16-18</td>
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<td></td>
<td>Characterization of group</td>
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<tr>
<td>29</td>
<td>Viruses II</td>
<td>M (5/9)</td>
<td>Chapt 16-18</td>
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<td></td>
<td>Hosts/replication cycles</td>
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<td>Celled microbes/Viruses/viroids/prions</td>
<td>W (5/11)</td>
<td>Chapt 16-18/38</td>
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<td>31</td>
<td>Host resistance I</td>
<td>M (5/16)</td>
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<td>Immunopathology</td>
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<td>Final Exam</td>
<td>Tuesday (5/24)</td>
<td>7:15-9:30 AM</td>
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