PRINCIPLES OF MICROBIOLOGY BIOL-2420
Department of Life Sciences
Fall 2015

A. COURSE INFORMATION
Course number/section: BIOL-2420.001
Class meeting time: 8:00-9:15pm TR
Class location: CI 138
Course Website: https://bb9.tamucc.edu

B. INSTRUCTOR INFORMATION
Instructor: Stella Doyungan, Ph.D.
Office location: EN 308
Office hours: Tues -10:00am-1:00pm; Thurs-11:00am-1:00pm;
Mon, Tues and Wed - 3:30-4:00pm
Telephone: 361-825-3686
e-mail: stella.doyungan@tamucc.edu
Appointments: Please make appointments through email

C. COURSE DESCRIPTION
Catalog Course Description
This course studies the biology of microorganisms such as bacteria, fungi, viruses and
selected protozoan with emphasis on those that cause diseases in humans. The laboratory
component involves laboratory skills and microbiological techniques. This class is intended
for non-science-, including health science majors; it cannot substitute for BIOL-2421.

D. PREREQUISITES AND COREQUISITES
Prerequisites
None

Corequisite
SMTE0092

E. REQUIRED TEXTBOOK(S), READINGS AND SUPPLIES
Required Textbook
Bauman, R. Microbiology: Alternate Edition with Diseases by Body Systems with Mastering

Laboratory Manual
Chess, B. 2009. Laboratory Applications in Microbiology: BIO 2420: Principles of
Access to Mastering Microbiology
Supplies
Lab coat and goggles
Students are required to print the BIOL-2420 Laboratory Guide and Worksheets posted in BlackBoard.

F. STUDENT LEARNING OUTCOMES AND ASSESSMENT
Assessment is a process used by instructors to help improve learning. Assessment is essential for effective learning because it provides feedback to both students and instructors. A critical step in this process is making clear the course’s student learning outcomes that describe what students are expected to learn to be successful in the course. The student learning outcomes for this course are listed below. By collecting data and sharing it with students on how well they are accomplishing these learning outcomes students can more efficiently and effectively focus their learning efforts. This information can also help instructors identify challenging areas for students and adjust their teaching approach to facilitate learning.

At the end of the semester, the student will be able to:
SLO 1. **Demonstrate** a broad understanding of the types, roles and significance of microorganisms, including bacteria, viruses, fungi and protozoa.
SLO 2. **Describe** the basic elements of microbiology, including microscopy, structure, metabolism genetics and recombinant DNA technology.
SLO 3. **Define** and describe the physical and chemical agents and chemotherapeutic drugs in the control of microorganisms.
SLO 4. **Discuss** the basic concepts of innate immunity and adaptive immunity.
SLO 5. **Describe** some bacterial and viral diseases in humans, their causes, transmission, signs, symptoms and methods of prevention.
SLO 6. **Perform** (within the laboratory component of the course) basic laboratory skills and basic microbiological techniques, including isolation, culture, and identification of microorganisms.

G. INSTRUCTIONAL METHODS AND ACTIVITIES
I lecture using PowerPoint and students listen and fill-up interactive lecture notes. Videos, animations and illustrations are shown to supplement lecture.

H. MAJOR COURSE REQUIREMENTS AND GRADING
Major Course Requirements
Lecture contributes 3/4 of your grade, and laboratory contributes 1/4 of your grade:

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<table>
<thead>
<tr>
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<tbody>
<tr>
<td>Lecture</td>
<td>75 %</td>
</tr>
<tr>
<td>Laboratory</td>
<td>25 %</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>100%</strong></td>
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Lecture
The lecture grade comprises grades in lecture exams, final exam and assignments.
1. **Lecture and Final Exams.** The exams cover specific assigned topics. They consist of multiple choice questions (identification, fill-in the blanks, matching type, true-false and short answer types). There are three lecture exams and final exam during the semester; each exam is worth 100 points.

2. **Assignments.** There is an assignment for each chapter to be discussed in lecture; These assignments can be accessed through Mastering Biology. The assignments open and close at particular dates so take note of their opening and closing dates. There is **NO make-up for missed assignments.** The assignments are worth 100 points.

**Grading in Lecture**

<table>
<thead>
<tr>
<th></th>
<th>Total possible points</th>
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<tbody>
<tr>
<td>Lecture exams (100 pts/exam x 3 exams)</td>
<td>300</td>
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<tr>
<td>Final exam</td>
<td>100</td>
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<tr>
<td>Assignments</td>
<td>100</td>
</tr>
</tbody>
</table>

Total possible points = 500 points

**Laboratory**
The laboratory grade comprises points in laboratory reports, worksheets, pre-lab quizzes and practical exams.

**Final grading:** Your final number and letter grade will be based on the grade you earn in the lecture and laboratory. Lecture grade is 75% and laboratory grade is 25%.

Final Grade = lecture grade (0.75) + laboratory grade (0.25)

Example: Final grade = 70 (0.75) + 90 (0.25) = 52.5 + 22.5 = 75 = C

<table>
<thead>
<tr>
<th>Final Letter Grade</th>
<th>Final Number Grade (%)</th>
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<tbody>
<tr>
<td>A</td>
<td>90 - 100</td>
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<tr>
<td>B</td>
<td>80 - 89</td>
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<tr>
<td>C</td>
<td>70 - 79</td>
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<tr>
<td>D</td>
<td>60 - 69</td>
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<tr>
<td>F</td>
<td>0 - 59</td>
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</tbody>
</table>
# I. COURSE CONTENT/SCHEDULE

<table>
<thead>
<tr>
<th>WEEK</th>
<th>DAY</th>
<th>DATE</th>
<th>TOPIC</th>
<th>CHAPTER</th>
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<tbody>
<tr>
<td>1</td>
<td>R</td>
<td>08/27</td>
<td>Introduction to Microbiology</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>T R</td>
<td>09/01</td>
<td>Introduction to Microbiology (cont’d)</td>
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<tr>
<td></td>
<td></td>
<td>09/03</td>
<td>Microbial Structure and Function</td>
<td>3</td>
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<tr>
<td>3</td>
<td>T R</td>
<td>09/08</td>
<td>Microbial Structure and Function (cont’d)</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>09/10</td>
<td>Microbial Growth and Metabolism</td>
<td>5 &amp; 6</td>
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<tr>
<td>4</td>
<td>T</td>
<td>09/15</td>
<td>Microbial Growth and Metabolism (cont’d)</td>
<td></td>
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<tr>
<td></td>
<td>R</td>
<td>09/17</td>
<td></td>
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<tr>
<td>5</td>
<td>T R</td>
<td>09/22</td>
<td>Microbial Genetics</td>
<td>7</td>
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<td></td>
<td></td>
<td>09/24</td>
<td>Microbial Genetics (cont’d)</td>
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<tr>
<td>6</td>
<td>T R</td>
<td>09/29</td>
<td>Physical and Chemical Control of Microbes</td>
<td>9</td>
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<tr>
<td></td>
<td></td>
<td>10/01</td>
<td>Physical and Chemical Control of Microbes (cont’d)</td>
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<tr>
<td>7</td>
<td>T R</td>
<td>10/06</td>
<td>Chemotherapy and Antibiotics</td>
<td>10</td>
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<td></td>
<td></td>
<td>10/08</td>
<td>Chemotherapy and Antibiotics (cont’d)</td>
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<tr>
<td>8</td>
<td>T R</td>
<td>10/13</td>
<td>Infection and Diseases</td>
<td>14</td>
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<td></td>
<td></td>
<td>10/15</td>
<td>Infection and Diseases (cont’d)</td>
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<tr>
<td>9</td>
<td>T R</td>
<td>10/20</td>
<td>Exam II</td>
<td>15</td>
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<td></td>
<td>10/22</td>
<td>Innate Immunity</td>
<td></td>
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<tr>
<td>10</td>
<td>T R</td>
<td>10/27</td>
<td>Innate Immunity (cont’d)</td>
<td>16</td>
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<tr>
<td></td>
<td></td>
<td>10/29</td>
<td>Adaptive Immunity</td>
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<tr>
<td>11</td>
<td>T R</td>
<td>11/03</td>
<td>Adaptive Immunity (cont’d)</td>
<td>19</td>
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<td></td>
<td></td>
<td>11/05</td>
<td>Microbial Diseases of the Skin</td>
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<tr>
<td>12</td>
<td>T R</td>
<td>11/10</td>
<td>Microbial Diseases of the Nervous System</td>
<td>20</td>
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<td>11/12</td>
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<tr>
<td>13</td>
<td>T R</td>
<td>11/17</td>
<td>Microbial Diseases of the Cardiovascular System</td>
<td>21</td>
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<tr>
<td></td>
<td></td>
<td>11/19</td>
<td>Microbial Diseases of the Respiratory System</td>
<td>22</td>
</tr>
<tr>
<td>14</td>
<td>T R</td>
<td>11/24</td>
<td>Microbial Diseases of the Gastrointestinal Tract</td>
<td>23</td>
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<tr>
<td></td>
<td></td>
<td>11/26</td>
<td>Thanksgiving Holiday</td>
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<tr>
<td>15</td>
<td>T</td>
<td>12/01</td>
<td>Microbial Diseases of the Reproductive Tract</td>
<td>24</td>
</tr>
</tbody>
</table>

Final exam: Thursday, December 03, 2015, 8:00-10:30 am

Note: Changes in this course schedule may be necessary and will be announced to the class by the Instructor. The assignments and exams shown are directly related to the Student Learning Outcomes described in Section F.
J. COURSE POLICIES

Attendance/Tardiness
Students are expected to attend on time in every scheduled class and laboratory meeting. If the student is absent in the lecture, it is the student’s responsibility to obtain missed materials. If a student is absent in the laboratory, the student will be given a zero grade for the laboratory activity performed that day. Make-up is only permitted for an excused absence and emergencies.

Students with University’s approved absence (athletics, military duty, others) must notify the instructor in advance of the scheduled absence. In case of emergencies, students should inform the instructor about the situation as soon as possible.

Proper documentation is required for excused absences. It must be in writing and signed by the person of authority (coach, doctor, funeral director). Personal reasons such as getting married, going on vacation, attending weddings, reunions, household or car repairs and NON-EMERGENCY medical or dental visits are not acceptable.

Late Work and Make-up Exams
No late lab worksheets and lab reports are accepted.

Extra Credit
NO INDIVIDUAL extra credit projects or assignments will be available in this class. Opportunities to earn bonus points however, are provided for the ENTIRE CLASS.

a) There are bonus points built as extra questions in the assignments.

b) Bonus points are given to students for attending SI sessions.
   10 or more attendance (10A) =10pts; 9A =9pts; 8A =8pts; 7A=7pts; 6A=6 pts;
   5A =5pts; 4A=4pts; 3A =3pts; 2A =2pts; 1A =1pt

Cell Phone Use
Students are required to put their cell phones to silent mode during class. Taking pictures and sending text messages during class are not allowed.

Laptop Use
Laptops, Ipads or similar tablet PC usage is limited to class-related activities such as taking notes and looking at the PowerPoint lectures and study guides.

Missed Exam
Special exam is given to students with excused absence (excused per TAMUCC guidelines) and the format of such exam is ESSAY and SHORT ANSWER TYPES.

Participation
Participation in class is voluntary.
K. COLLEGE AND UNIVERSITY POLICIES

- **Academic Integrity (University)**
  University students are expected to conduct themselves in accordance with the highest standards of academic honesty. Academic misconduct for which a student is subject to penalty includes all forms of cheating, such as illicit possession of examinations or examination materials, falsification, forgery, complicity or plagiarism. (Plagiarism is the presentation of the work of another as one’s own work.) In this class, academic misconduct or complicity in an act of academic misconduct on an assignment or test will result in a failing grade.

- **Classroom/Professional Behavior**
  Texas A&M University-Corpus Christi, as an academic community, requires that each individual respect the needs of others to study and learn in a peaceful atmosphere. Under Article III of the Student Code of Conduct, classroom behavior that interferes with either (a) the instructor’s ability to conduct the class or (b) the ability of other students to profit from the instructional program may be considered a breach of the peace and is subject to disciplinary sanction outlined in article VII of the Student Code of Conduct. Students engaging in unacceptable behavior may be instructed to leave the classroom. This prohibition applies to all instructional forums, including classrooms, electronic classrooms, labs, discussion groups, field trips, etc.

- **Statement of Civility**
  Texas A&M University-Corpus Christi has a diverse student population that represents the population of the state. Our goal is to provide you with a high quality educational experience that is free from repression. You are responsible for following the rules of the University, city, state and federal government. We expect that you will behave in a manner that is dignified, respectful and courteous to all people, regardless of sex, ethnic/racial origin, religious background, sexual orientation or disability. Behaviors that infringe on the rights of another individual will not be tolerated.

- **Deadline for Dropping a Course with a Grade of W (University)**
  The grade of W will be assigned to any student officially dropping a course. Please consult with the instructor before you decide to drop to be sure it is the best thing to do. Just stopping attendance and participation WILL NOT automatically result in your being dropped from the class. Should dropping the course be the best course of action, visit the Office of the University Registrar for the Course Drop Form that must be submitted. No student is eligible to receive a W without completing the official drop process by this deadline. Last day to drop the class is Friday, November 06, 2015. Last day to withdraw from the University, is on Monday, November 30, 2015.

- **Grade Appeals (College of Science and Engineering)**
  As stated in University Procedure 13.02.99.C2.01, Student Grade Appeal Procedures, a student who believes that he or she has not been held to appropriate academic standards as outlined in the class syllabus, equitable evaluation procedures, or appropriate grading,
may appeal the final grade given in the course. The burden of proof is upon the student to
demonstrate the appropriateness of the appeal. A student with a complaint about a grade
is encouraged to first discuss the matter with the instructor. For complete details,
including the responsibilities of the parties involved in the process and the number of
days allowed for completing the steps in the process, see University Procedure
13.02.99.C2.01, Student Grade Appeal Procedures. These documents are accessible
through the University Rules website at
http://www.tamucc.edu/provost/university_rules/index.html, and the College of Science
and Engineering Grade Appeals webpage at
http://sci.tamucc.edu/students/GradeAppeal.html. For assistance and/or guidance in the
grade appeal process, students may contact the chair or director of the appropriate
department or school, the Office of the College of Science and Engineering Dean, or the
Office of the Provost.

- **Disability Services**
The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that
provides comprehensive civil rights protection for persons with disabilities. Among other
things, this legislation requires that all students with disabilities be guaranteed a learning
environment that provides for reasonable accommodation of their disabilities. If you
believe you have a disability requiring an accommodation, please call (361) 825-5816 or
visit Disability Services in Corpus Christi Hall 116.

If you are a returning veteran and are experiencing cognitive and/or physical access
issues in the classroom or on campus, please contact the Disability Services office
for assistance at (361) 825-5816.

http://disabilityservices.tamucc.edu/

- **Statement of Academic Continuity**
In the event of an unforeseen adverse event, such as a major hurricane and classes
could not be held on the campus of Texas A&M University–Corpus Christi; this course would continue through the use of Blackboard and/or email. In addition,
the syllabus and class activities may be modified to allow continuation of the course.
Ideally, University facilities (i.e., emails, web sites, and Blackboard) will be
operational within two days of the closing of the physical campus. However,
students need to make certain that the course instructor has a primary and a
secondary means of contacting each student.

L. **OTHER INFORMATION**

- **Academic Advising**
The College of Science & Engineering requires that students meet with an Academic
Advisor as soon as they are ready to declare a major. The Academic Advisor will set
up a degree plan, which must be signed by the student, a faculty mentor, and the
department chair. Meetings are by appointment only; advisors do not take walk-ins.
Please call or stop by the Advising Center to check availability and schedule an appointment. The College’s Academic Advising Center is located in Center for Instruction 350 or can be reached at (361) 825-3928.

GENERAL DISCLAIMER

I reserve the right to modify the information, schedule, assignments, deadlines, and course policies in this syllabus if and when necessary. I will announce such changes in a timely manner during regularly scheduled lecture periods.