PRINCIPLES OF MICROBIOLOGY BIOL-2420
Department of Life Sciences
Spring 2016

A. COURSE INFORMATION
Course number/section: BIOL-2420.001
Class meeting time: 9:30-10:45am TR
Class location: C1 126
Course Website: https://bb9.tamucc.edu

B. INSTRUCTOR INFORMATION
Instructor: Stella Doyungan, Ph.D.
Office location: EN 308
Office hours: Monday -10:00-12:00noon and 01:00-02:00pm
Tuesday and Thursday-11:00-12:00noon
Telephone: 361-825-3686
e-mail: stella.doyungan@tamucc.edu
Appointments: Please make appointments through email

C. COURSE DESCRIPTION
Catalog Course Description
Introduction to microorganisms with emphasis on those of importance in patient care.
Principles of disinfection, sterilization and immunity. This class is intended for nursing
majors; it cannot substitute for BIOL 2421 - Microbiology. SMTE 0092 - Biomedical
Laboratory Safety Seminar is a co-requisite for this course. Documented completion of this
safety training is required early in the semester for continued participation in this course.
Safety training given during a laboratory meeting early in the semester is required for
continued participation in this course.

D. PREREQUISITES AND COREQUISITES
Prerequisites Corequisite
None SMTE0092

E. REQUIRED TEXTBOOK(S), READINGS AND SUPPLIES
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
- Qwizdom responder, Lab coat and googles
- 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:

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lecture</td>
<td>75%</td>
</tr>
<tr>
<td>Laboratory</td>
<td>25%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>
Lecture
The lecture grade comprises grades in lecture exams, final exam, quizzes and homeworks.

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. **Quizzes.** Every lecture meeting, there are some questions for points and Qwizdom responders are used to answer these questions. The students are required to bring their functioning Qwizdom responder every lecture meeting. They must be present to answer the questions and are not permitted to use another student’s responder. Answering questions for another student absent in lecture is cheating and will not be tolerated. There is NO make-up for missed quizzes. The quizzes are worth 100 points.

3. **Homeworks.** There is homework for each chapter to be discussed in lecture; These homeworks can be accessed through Mastering Microbiology. The homeworks open and close at particular dates so take note of their opening and closing dates. There is NO make-up for missed homeworks. The homeworks are worth 100 points.

**Grading in Lecture**

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

**Total possible points = 600 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>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>90 - 100</td>
</tr>
<tr>
<td>B</td>
<td>80 - 89</td>
</tr>
<tr>
<td>C</td>
<td>70 - 79</td>
</tr>
<tr>
<td>D</td>
<td>60 - 69</td>
</tr>
<tr>
<td>F</td>
<td>0 - 59</td>
</tr>
</tbody>
</table>
I. COURSE CONTENT/SCHEDULE

<table>
<thead>
<tr>
<th>WEEK</th>
<th>DAY</th>
<th>DATE</th>
<th>TOPIC</th>
<th>CHAPTER</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>R</td>
<td>01/21</td>
<td>Introduction and History</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>T</td>
<td>01/26</td>
<td>Introduction and History</td>
<td></td>
</tr>
<tr>
<td></td>
<td>R</td>
<td>01/28</td>
<td>Microscopy, Staining &amp; Microbial Structure and Function</td>
<td>3&amp;4</td>
</tr>
<tr>
<td>3</td>
<td>T</td>
<td>02/02</td>
<td>Microscopy, Staining &amp; Microbial Structure and Function</td>
<td></td>
</tr>
<tr>
<td></td>
<td>R</td>
<td>02/04</td>
<td>Microbial Growth and Metabolism</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>T</td>
<td>02/09</td>
<td>Microbial Growth and Metabolism</td>
<td></td>
</tr>
<tr>
<td></td>
<td>R</td>
<td>02/11</td>
<td></td>
<td>5 &amp; 6</td>
</tr>
<tr>
<td>5</td>
<td>T</td>
<td>02/16</td>
<td>Exam 1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>R</td>
<td>02/18</td>
<td>Microbial Genetics and rDNA technology</td>
<td>7 and 8</td>
</tr>
<tr>
<td>6</td>
<td>T</td>
<td>02/23</td>
<td>Microbial Genetics and rDNA technology</td>
<td></td>
</tr>
<tr>
<td></td>
<td>R</td>
<td>02/25</td>
<td>Physical and Chemical Control of Microbes</td>
<td>9</td>
</tr>
<tr>
<td>7</td>
<td>T</td>
<td>03/01</td>
<td>Physical and Chemical Control of Microbes</td>
<td></td>
</tr>
<tr>
<td></td>
<td>R</td>
<td>03/03</td>
<td>Chemotherapy and Antibiotics</td>
<td>10</td>
</tr>
<tr>
<td>8</td>
<td>T</td>
<td>03/08</td>
<td>Chemotherapy and Antibiotics</td>
<td>14</td>
</tr>
<tr>
<td></td>
<td>R</td>
<td>03/10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>T</td>
<td>03/15</td>
<td>NO CLASS – SPRING BREAK</td>
<td></td>
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<tr>
<td></td>
<td>R</td>
<td>03/17</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>T</td>
<td>03/22</td>
<td>Infection and Diseases</td>
<td>15</td>
</tr>
<tr>
<td></td>
<td>R</td>
<td>03/24</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>T</td>
<td>03/29</td>
<td>Innate Immunity</td>
<td>16</td>
</tr>
<tr>
<td></td>
<td>R</td>
<td>04/31</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>T</td>
<td>04/05</td>
<td>Adaptive Immunity</td>
<td>19</td>
</tr>
<tr>
<td></td>
<td>R</td>
<td>04/07</td>
<td></td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>T</td>
<td>04/12</td>
<td>Exam 3</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>R</td>
<td>04/14</td>
<td>Microbial Diseases of the Skin</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>T</td>
<td>04/19</td>
<td>Microbial Diseases of the Nervous System</td>
<td>21</td>
</tr>
<tr>
<td></td>
<td>R</td>
<td>04/21</td>
<td>Microbial Diseases of the Cardiovascular System</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>T</td>
<td>04/19</td>
<td>Microbial Diseases of the Respiratory System</td>
<td>22</td>
</tr>
<tr>
<td></td>
<td>R</td>
<td>04/21</td>
<td>Microbial Diseases of the Digestive System</td>
<td>23</td>
</tr>
<tr>
<td>16</td>
<td>T</td>
<td>05/03</td>
<td>Microbial Diseases of the Reproductive System</td>
<td>24</td>
</tr>
</tbody>
</table>

Final exam: Thursday, May 05, 2016 at 8:00-10:30am

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 can be bonus points built as extra questions in the Qwizdom quizzes and homeworks. These bonus points cannot be made up.

b) Some tests are given unannounced and questions answered correctly in these tests are extra credits.

c) 15 bonus points (these 15 points is 2.5% of the total possible points which is 600 points in this class) are given to students who attend 80% (19 out of 23 class days, see below) of class lecture days (*Exam days not included*). This 15 bonus points is ALL OR NONE, which means that if your attendance is less than 80% you will not get the 15 bonus points. Attendance in class is taken by answering the attendance question using the Qwizdom remote control at the end of the lecture. **If you leave early and cannot answer this question, you are marked absent.**

**Class days:**
- Month of January 2016 : Jan 28
- Month of February 2016 : Feb 2, 4, 9, 11, 18, 23, 25
- Month of March 2016 : Mar 1, 3, 8, 22, 24, 29, 31
- Month of April 2016 : Apr 5, 7, 14, 19, 21, 26, 28
- Month of April 2016 : May 3
d) Bonus points are given to students for attending SI sessions.
   10 or more attendance (A) =10pts; 9A =9pts; 8A =8pts; 7A=7pts; 6A=6 pts;
   5A =5pts; 4A=4pts; 3A =3pts; 2A =2pts; 1A =1pt
   **Students attending ALL SI sessions earn 5 points more.**

**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, I pads 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 UNIVERSITIY 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 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, April 08, 2016. Last day to withdraw from the University, is on Monday, May 02, 2016.

- **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.tamu.cc/provost/university_rules/index.html](http://www.tamu.cc/provost/university_rules/index.html), and the College of Science and Engineering Grade Appeals webpage at [http://sci.tamu.cc/students/GradeAppeal.html](http://sci.tamu.cc/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.