PRINCIPLES OF MICROBIOLOGY BIOL-2420
Department of Life Sciences
Spring 2020

A. COURSE INFORMATION

Course number/section: BIOL-2420.001
Class meeting time: 9:30-10:45am TR
Class location: IH 160
Course Website: https://bb9.tamucc.edu

B. INSTRUCTOR INFORMATION

Instructor: Stella Doyungan, Ph.D.
Office location: Tidal Hall (TH) 232
Office hours: Tuesday and Thursday at 3:30-6:00pm
Telephone: 361-825-3686
e-mail: stella.doyungan@tamucc.edu
Appointments: Preferably through email.

C. COURSE DESCRIPTION

Catalog Course Description
Introduction to microorganisms with emphasis on those of importance in patient care. Principles of disinfection, sterilization, 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: None
Corequisite: SMTE0092

E. REQUIRED TEXTBOOK(S), READINGS AND SUPPLIES

Textbook

Laboratory Manual
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

Lecture will be the primary form of instruction. However, I will make use of “active learning” strategies such as students filling-up interactive lecture notes and using Qwizdom clickers for class quizzes. Sometimes, homework will be assigned, and students will be quizzed about the homework. Occasionally classroom exercises will require student participation. 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:
Lecture
The lecture grade comprises grades in lecture exams, final exam and quizzes.

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 a final exam. 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.

Grading in Lecture

<table>
<thead>
<tr>
<th>Exam</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exam 1</td>
<td>100</td>
</tr>
<tr>
<td>Exam 2</td>
<td>100</td>
</tr>
<tr>
<td>Exam 3</td>
<td>100</td>
</tr>
<tr>
<td>Final exam</td>
<td>100</td>
</tr>
<tr>
<td>Quizzes</td>
<td>100</td>
</tr>
</tbody>
</table>

Total = 500 points

**I WILL NOT ROUND DECIMALS OF LECTURE GRADES TO THE NEAREST WHOLE NUMBER.**

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

Grading in Lab

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lab reports/Worksheets</td>
<td>7%</td>
</tr>
<tr>
<td>Lab exams</td>
<td>10%</td>
</tr>
<tr>
<td>Quizzes</td>
<td>7%</td>
</tr>
<tr>
<td>Instructor’s evaluation</td>
<td>1%</td>
</tr>
</tbody>
</table>

Total = 25%

**I WILL NOT ROUND DECIMALS OF LABORATORY GRADES TO THE NEAREST WHOLE NUMBER.**
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

Final letter grade designation

90 -100 = A
80 - 89 = B
70 - 79 = C
60 - 69 = D
59 and less = F

I WILL ROUND DECIMALS OF FINAL NUMBER GRADE TO THE NEAREST WHOLE NUMBER TO DESIGNATE LETTER GRADE.

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>T</td>
<td>01/21</td>
<td>Introduction to Microbiology I</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>R</td>
<td>01/23</td>
<td>Introduction to Microbiology II</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>T</td>
<td>01/28</td>
<td>Microscopy, Staining and Microbial Structure and Function I</td>
<td>3 and 4</td>
</tr>
<tr>
<td></td>
<td>R</td>
<td>01/30</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>T</td>
<td>02/04</td>
<td>Microscopy, Staining and Microbial Structure and Function II</td>
<td></td>
</tr>
<tr>
<td></td>
<td>R</td>
<td>02/06</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>T</td>
<td>02/11</td>
<td>Microbial Metabolism, Nutrition and Growth I</td>
<td>5 &amp; 6</td>
</tr>
<tr>
<td></td>
<td>R</td>
<td>02/13</td>
<td>Microbial Metabolism, Nutrition and Growth II</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>T</td>
<td>02/18</td>
<td>Exam I</td>
<td></td>
</tr>
<tr>
<td></td>
<td>R</td>
<td>02/20</td>
<td>Microbial Metabolism, Nutrition and Growth III</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>T</td>
<td>02/25</td>
<td>Microbial Genetics and rDNA Technology I</td>
<td>7 and 8</td>
</tr>
<tr>
<td></td>
<td>R</td>
<td>02/27</td>
<td>Microbial Genetics and rDNA Technology II</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>T</td>
<td>03/03</td>
<td>Microbial Genetics and rDNA Technology III</td>
<td>9</td>
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<tr>
<td></td>
<td>R</td>
<td>03/05</td>
<td>Microbial Control I</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>T</td>
<td>03/10</td>
<td>SPRING BREAK – NO CLASS</td>
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<tr>
<td></td>
<td>R</td>
<td>03/12</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>T</td>
<td>03/17</td>
<td>Microbial Control II</td>
<td>9</td>
</tr>
<tr>
<td></td>
<td>R</td>
<td>03/19</td>
<td>Microbial Control III</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>T</td>
<td>03/24</td>
<td>Exam II</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>R</td>
<td>03/26</td>
<td>Chemotherapy and Antibiotics I</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>T</td>
<td>03/31</td>
<td>Chemotherapy and Antibiotics II</td>
<td></td>
</tr>
<tr>
<td></td>
<td>R</td>
<td>04/02</td>
<td>Chemotherapy and Antibiotics III</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>T</td>
<td>04/07</td>
<td>Infection and Diseases I</td>
<td>14</td>
</tr>
<tr>
<td></td>
<td>R</td>
<td>04/09</td>
<td>Infection and Diseases II</td>
<td></td>
</tr>
</tbody>
</table>
13 | T | 04/14 | Exam III
    | R | 04/16 | Infection and Diseases III
14 | T | 04/21 | Innate Immunity I
    | R | 04/23 | Innate Immunity II
15 | T | 04/28 | Adaptive Immunity I
    | R | 04/30 | Adaptive Immunity II
16 | T | 05/05 | Bacterial and Viral Diseases of the Human Body by Organ Systems

Final exam: Thursday, May 14, 2019 at 8:00-10:30am in IH 160

Midterm Grading – March 4-25, 2020

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 class quizzes. These bonus points cannot be made up.

b) 15 bonus points are given to students who attend 90% of class lecture days. This 15-bonus points is **ALL OR NONE**, which means that if **your attendance is less than 90% 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.**

**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.

**Food**
In the laboratory, eating and drinking is prohibited.

**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 but encouraged. Extra credit points sometimes will be available for participation.

**Returning Exams**
Exams will not be given back to students. Students, however, will have the opportunity to look at the exam questions after their score reports are given back. Students are not allowed to take picture or Xerox the exam.

**Interrupted Exam**
If there is a disruption during the exam that requires evacuation of the building, a make-up exam will be given to students that have not finished the test. No make-up exam will be given to students that have finished the test. The schedule of the make-up exam will be announced, and the format of the exam will be multiple choice. The same rule applies to students taking exam in Exam Services.

**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)**
  I hope that you never find it necessary to drop this or any other class. However, events can sometimes occur that make dropping a course necessary or wise. **Please consult with your academic advisor, the Financial Aid Office, and me, before you decide to drop this course.** Should dropping the course be the best course of action, you must initiate the process to drop the course by going to the Student Services Center and filling out a course drop form. Just stopping attendance and participation WILL NOT automatically result in your being dropped from the class. Please consult the Academic Calendar ([http://www.tamucc.edu/academics/calendar/](http://www.tamucc.edu/academics/calendar/)) for the last day to drop a course.

- **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.