MEDICAL MICROBIOLOGY BIMS 4374
Department of Life Sciences
Fall 2016 v2

A. COURSE INFORMATION

Course number/section: BIMS 4374.001
Class meeting time: MW 7:00-8:15 pm
Class location: Center for the Sciences (CS) 115
Course Website: http://bb9.tamucc.edu

B. INSTRUCTOR INFORMATION

Instructor: Gregory W. Buck, Ph.D., Associate Professor
Office location: Center for the Sciences (CS) 251
Office hours: MW 10:00-11:15; TR 1:00-2:15
Telephone: (361) 825-3717
e-mail: Gregory.Buck@tamucc.edu
Appointments: Preferred method is by e-mail

C. COURSE DESCRIPTION

Catalog Course Description
Study of common human pathogenic organisms. Includes bacterial, parasitic, viral and fungal infections with emphasis on pathogenesis and treatment.

Extended Course Description
The course entails a survey of selected major pathogenic bacteria, viruses, fungi, and parasites causing disease in humans, using an organ system approach. The course only highlights major mechanisms of HOW bacteria cause disease (pathogenesis), but specifically delves into WHY specific traits encoded by bacterial genes (virulence factors) may result in disease states, what effects these diseases have on individuals (in short, human microbial ecology), and the basis for therapeutic intervention (antimicrobial treatments). Some effect on groups and populations (public health microbiology) will be discussed. Students are not expected to learn or understand the details of basic science involved in either pathogenesis or virulence of etiologic agents.

D. PREREQUISITES AND COREQUISITES

Prerequisites
BIOL 2421

Corequisites
None
E. REQUIRED TEXTBOOK(S), READINGS AND SUPPLIES

Required Textbook(s)


Optional Textbook(s) or Other References

Supplies
Required textbook. Students may need to download and print journal articles at own cost.

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.

By the end of this course, students should be able to achieve all outcomes at a level of ≥70%:

1. Describe the pathology of infectious diseases caused by bacteria and viruses, and by certain selected fungi and parasites;
2. Categorize and analyze infectious diseases by each organ system;
3. Justify the general treatment of infectious diseases with current specific pharmaceutical interventions;
4. Discuss the epidemiology and immune responses to the pathogens;
5. Critique information given on the Internet for accuracy related to current diseases, organisms, or treatments;
6. Assess information given in case studies for differential diagnoses and most probable etiologic agent(s).
G. **INSTRUCTIONAL METHODS AND ACTIVITIES**

Class exams—these four (4) evaluations are given at 100 pts each, including a comprehensive final, and may consist of short answer, essay, multiple choice, case studies, matching or descriptive T/F questions.

Four Case Studies—these exercises will be done in groups outside of class. **They will be due one week after being issued.**

Extra Credit assignments may be given at prerogative of instructor, who is NOT obligated to give make-up extra credit opportunities. These opportunities include quizzes on antibiotics, additional case studies, Internet assignments, or journal articles to read/summarize.

*N.B: Instructors reserve the right to assign talks by visiting seminar speakers as an extra case history not included in the four (4), or as a make-up. Instructor may also give information on selected microorganisms not covered in lecture as handouts (“The Weekly Microbe”), Web-based assignments, case histories, journal articles, or MMWR synopses. These organisms can be included on examinations. Students will be responsible for all material (textbook, guest lectures, web sites, case studies, and handouts) covered in the lecture.*

H. **MAJOR COURSE REQUIREMENTS AND GRADING**

Introduction--Please note that Instructor may modify assignments, number of assignments and point values depending on number of students in class. Also note that “any mid-term grades posted on S.A.I.L. and Blackboard are not official University grades, not a guarantee of final grades and are never updated; once they are posted they cannot be changed even if your grade in the class does change.”

<table>
<thead>
<tr>
<th>ACTIVITY</th>
<th>% of FINAL GRADE</th>
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</thead>
<tbody>
<tr>
<td>Exams (Including comprehensive final)</td>
<td>80</td>
</tr>
<tr>
<td>Homework (Case Studies)</td>
<td>20</td>
</tr>
</tbody>
</table>

I. **COURSE CONTENT/SCHEDULE**  Chapters are from Murray et al (M) or from Gallagher and MacDougal (G)

<table>
<thead>
<tr>
<th>DATE (BY DAY OR WEEK)</th>
<th>TOPIC</th>
<th>CHAPTER(S)</th>
<th>ASSIGNMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1-W Aug 24</td>
<td>Review of Bacteria Structure</td>
<td>M-1, 12, 13</td>
<td>WM 1-Norm Flora</td>
</tr>
<tr>
<td>#2-M Aug 29</td>
<td>Normal flora, Pathogenesis</td>
<td>M-2, 14, 15</td>
<td>WM2-Immunology</td>
</tr>
<tr>
<td>#3-W Aug 31</td>
<td>Infection and Immunity 1</td>
<td>M-7-10</td>
<td></td>
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<tr>
<td>#4-M Sep 5</td>
<td>Labor Day Holiday—no class</td>
<td></td>
<td></td>
</tr>
<tr>
<td>#5-W Sep 7</td>
<td>Infection and Immunity 2</td>
<td>M-7-10</td>
<td></td>
</tr>
<tr>
<td>#6-M Sep 12</td>
<td>Vaccines</td>
<td>M-11</td>
<td>Case Study 1 given</td>
</tr>
<tr>
<td>#7-W Sep 14</td>
<td>Antimicrobials 1</td>
<td>M-17; G-5, 7-13</td>
<td>HO 2AB Antibiotics</td>
</tr>
<tr>
<td>DATE (BY DAY OR WEEK)</td>
<td>TOPIC</td>
<td>CHAPTER(S)</td>
<td>ASSIGNMENTS</td>
</tr>
<tr>
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<tr>
<td>#8-M Sep 19</td>
<td>Antimicrobials 2</td>
<td>G-14-25</td>
<td>HO 2AB Antibiotics</td>
</tr>
<tr>
<td>#9-W Sep 21</td>
<td>Viral Resp Infections</td>
<td>M-37-38, 42, 46, 47, 48, 49, 53</td>
<td>HO 3 Pneumonia</td>
</tr>
<tr>
<td>M Sep 26</td>
<td>Exam 1</td>
<td>Lect. 1-9</td>
<td></td>
</tr>
<tr>
<td>#10-W Sep 28</td>
<td>Bacterial Resp. Infections 1</td>
<td>M-18, 19, 22, 24</td>
<td>WM3- Staph; WM8-Pseudomonas</td>
</tr>
<tr>
<td>#11-M Oct 3</td>
<td>Bacterial Resp. Infections 2</td>
<td>M-18, 19, 27, 29</td>
<td>WM3- Staph; WM8-Pseudomonas</td>
</tr>
<tr>
<td>#12-W Oct 5</td>
<td>Intravascular Infections &amp; Sepsis</td>
<td>M-18, 19, 20, 35</td>
<td>WM3-Staph; Case Study 2 given</td>
</tr>
<tr>
<td>#13-M Oct 10</td>
<td>Anaerobes; CNS Infections 1</td>
<td>M-21, 23, 24, 56</td>
<td>WM5-Naegleria; WM6-Anaerobes</td>
</tr>
<tr>
<td>#14-W Oct 12</td>
<td>CNS Infections 2</td>
<td>M-29, 31, 43, 50</td>
<td></td>
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<tr>
<td>#15-M Oct 17</td>
<td>CNS Infections 3</td>
<td>M-52, 54, 58, 60, 64, 65</td>
<td>WM7-Hepatitis</td>
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<tr>
<td>#16-W Oct 19</td>
<td>GI Infections 1</td>
<td>M-21, 27, 30, 34, 55</td>
<td>WM4-Enterobacteriaceae WM4C-Vibrios</td>
</tr>
<tr>
<td>#17-M Oct 24</td>
<td>GI Infections 2</td>
<td>M-28, 31, 32, 42, 47, 51, 65, 68</td>
<td></td>
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<tr>
<td>W Oct 26</td>
<td>Exam 2</td>
<td>Lect. 10-17</td>
<td></td>
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<tr>
<td>#18-M Oct 31</td>
<td>GU-STD 1</td>
<td>M-23, 32, 33</td>
<td></td>
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<tr>
<td>#19-W Nov 2</td>
<td>GU-STD 2</td>
<td>M-35, 41, 55</td>
<td>Case study 3 given</td>
</tr>
<tr>
<td>#20-M Nov 7</td>
<td>Obligate Intracellular Bacteria</td>
<td>M-34-35</td>
<td>WM9 Obl Intracel. Bact.</td>
</tr>
<tr>
<td>#21-W Nov 9</td>
<td>Skin &amp; Soft Tissue 1</td>
<td>M-18, 19, 25, 27, 30, 32</td>
<td>WM3- Staph; WM8-Pseudomonas</td>
</tr>
<tr>
<td>#22-M Nov 14</td>
<td>Skin &amp; Soft Tissue 2; Viral Exanthems</td>
<td>M-41, 42, 44</td>
<td>WM10-Skin Lesions</td>
</tr>
<tr>
<td>W Nov 16</td>
<td>Exam 3</td>
<td>Lect. 18-22</td>
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<tr>
<td>#23-M Nov 21</td>
<td>Graduate Student Presentation</td>
<td>TBA</td>
<td>Case Study 4 given</td>
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<tr>
<td>#24-W Nov 23</td>
<td>No Class-Happy Thanksgiving</td>
<td></td>
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<tr>
<td>#26-W Nov 30</td>
<td>Bioterrorism &amp; Emerging Infections</td>
<td>TBA</td>
<td>WM14-bioterrorism</td>
</tr>
<tr>
<td>#28—Dec 5</td>
<td>Review</td>
<td></td>
<td></td>
</tr>
<tr>
<td>M Dec 7</td>
<td>Final Exam and optional Case Study 5</td>
<td>Comprehensive</td>
<td>7:15-9:45 pm Note different time</td>
</tr>
</tbody>
</table>

Handouts (subject to change):
Weekly Microbe (WM) 1—Normal Flora v8 2014
Note: Changes in this course schedule may be necessary and will be announced to the class by
the Instructor or on Blackboard. 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 every scheduled class meeting and to be on-time. It is the
responsibility of the student to obtain any material missed during an absence from
his/her classmates. Power Points are not placed in the library and placement on
Blackboard will be limited.

Late Work and Make-up Exams
Students will be given a Late Assignment Penalty for tardy work: 10% assignment grade
deduction per class day late. However, after the 3rd day, late assignments will not be
accepted. In-class late assignments are defined by being turned in after 7:05 pm. Please
note that class assignments may be sent to me by e-mail or slid under my office door;
tardiness is determined by the time noted on the instructor’s Inbox, but allowances can
be made for server problems. Files contaminated by viruses, spyware, and worms will
not be accepted. DO NOT ASK THE CUSTODIANS to let you into my office to place
an assignment on my desk.

Extra Credit
Some extra credit is assured as pre- and post-test assessments. No make-ups are given
for pre- and post-tests. Other extra credit assignments may be given at instructor’s
prerogative. Instructor is not obligated to give make-up assignments for extra credit
opportunities, whether excused or unexcused. The ONLY possible exception is for
students with a university-approved scheduled absence. The make-up (if given) may not
be the exact same assignment given to the class.
Cell Phone Use
DO NOT USE CAMERA PHONES IN LECTURE. DO NOT SEND TEXT MESSAGES DURING CLASS. Please turn off all cell phones, beepers, Bluetooth devices, Black Berrys, etc., before entering the classroom, or at least place them on silent mode. I would prefer that earpieces not be worn in lecture. DO NOT TAKE PHOTOS of Power Point slides or videos with your cell phone camera unless otherwise instructed. Recording of lectures with recorders can only be done with permission of instructor—please see me privately.

Laptop Use
I have no problems with any student using a laptop in class, as long as they are not looking at pornography, anime, videos, etc.

Food in Class
I prefer that you not eat or drink in class, but I will not throw you out or ask you to leave.

Missed Exams
Students have two choices for making up exams due to excused absences. They can do an all-essay make-up exam, or doubling the grade on the final exam. There is no make-up for missed quizzes, or for missed exams due to unexcused absences. Missed extra credit opportunities may or may not be given make-up assignments, depending upon the nature of the assignment. Please note that instructor determines what is not excused. I define excused absences as emergency visits to the ER or physician or dentist; job, graduate and professional school interviews; death of close family members (siblings, in-laws, parents, aunts or uncles, step-parents, grandparents or great-grandparents, first cousins), or University-approved absences as described in the Catalogue and Student Handbook.

Participation
I expect that all members in the class will participate in the questioning, discussions, and interactions within the lecture. Formal assessment of class participation is not done as part of grade, but I do informally monitor it, and I will note it if you ask me for a letter of recommendation.

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** submitted. No student is eligible to receive a W without completing the official drop process by this deadline. 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](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](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 (ADA of 1990, including the ADA Amendments from 2008 (PL 110-325), 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.

  - This act also includes **returning veterans** who may be experiencing cognitive and/or physical access issues in the classroom or on campus. 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.

  - 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/](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.

**Hints on doing well in course**
First, read the syllabus. Second, re-read the syllabus. Third, read the syllabus again.

Next, read the assigned text chapters. The text is designed for medical student use, so chapters are relatively short and contain plenty of tables, charts and graphs. You need to re and re-read the text in conjunction with the notes taken from class Power Points, the Weekly Microbes and other handouts. This course aims for higher-level critical thinking, not just memorize the textbook and regurgitate facts. If you just memorize, you will obtain a C. If you integrate material and think of how organisms correlate to body systems and to diseases, you will retain information longer and it will make more sense. Please read the frontispiece of the Medical Micro text for an example of how to approach studying for this course. This message came from a current medical student and alumnus:

*I had to stop and take a moment to think about Med Micro and be grateful about the way you taught the course. Although it has almost been [three] years, I am grateful that I took your course back then. I may not remember everything, but I know that I am not having as hard of a time as some of my peers ...*

**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.