BSC 428-01E

Intro Medical Microbiology

Fall 2024
Texas A&M University at Commerce
Tue,Thu 11:00 AM-12:15 PM
STC 122

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Please e-mail me if you have a question. I will try to respond within 24 hours, except for weekends and holidays.

Office Hours: Thursdays 2:00-3:20 PM or by appointment.
I enjoy teaching and talking with you. If you have questions, drop by my office or join the Zoom session (link below) during office hours. If the time does not work for you, feel free to email me, and we can set up a time that does.
Office Hour Zoom link:
https://tamuc.zoom.us/j/7032367457?pwd=RkFQZmtkcm90emNnUGNDL0E0Sjg0UT09
Meeting ID: 703 236 7457
Passcode: OH

COURSE INFORMATION

Textbook(s) Required: Sherris Medical Microbiology. 2021. 8th edition, Ryan ISBN-13: 978-1260464283, or eBook. This book is available for purchase or rental at the TAMUC bookstore and can be bought or rented from various local and online retailers. Readings from the textbook will be announced and follow the course schedule's topic order. In order for you to get the most out of the lecture, it is important that you complete the assigned readings with each lecture since lectures will build on the reading assignment.

Course Description

BSc 428, Intro Medical Microbiology, is a course for junior or senior biology undergraduate

The *syllabus/schedule are subject to change.*

students designed to help understand the basic principles of pathogenic microorganisms, infection, and human-pathogen interactions. Specific topics covered during this class include pathogenic microorganisms, diagnostic laboratory procedures, infection controls, and emerging diseases. This course includes many etiological agents responsible for infectious diseases. This introductory level medical microbiology course will focus on the principles of pathogenic mechanisms, rather than individual cases of diseases, in order to foster a student's ability to develop the fundamental understanding required for their future clinical career.

Student Learning Outcomes

Upon completion of this course, you should be able to;

1. Explain the nature of infection.
2. Distinguish pathogenic and non-pathogenic microorganisms.
3. Identify different morphologies of pathogenic microorganisms and determine corresponding, efficient treatments.
4. Explain basic principles of disease control.
5. Explain how disease control is tightly linked to the growth control of microorganisms.
6. Explain the importance of the growing incidence of antimicrobial resistance and seek possible solutions to control antimicrobial resistance.

COURSE REQUIREMENTS

Minimal Technical Skills Needed

- Proficiency in using the D2L Brightspace Learning Management System in myLEOOnline
- Proficiency in using and access to Microsoft PowerPoint

Instructional Methods

This is a fully in-person course. It is very important to attend all the classes.

Student Responsibilities or Tips for Success in the Course

- ✓ **Checking both D2L and emails for course-related announcements.**
- ✓ Attending all the classes.
- ✓ Dedicated time to learn course materials.
- ✓ Reading assigned textbook materials.
- ✓ Have the required technology (a computer, a secure and reliable internet connection, and other requirements detailed in this syllabus – please read the "Technology Requirements" section.
- ✓ **Take exams on the exam days.**
- ✓ **Submitting the homework and the assignment before deadlines.**
- ✓ If special accommodation is needed, notify the instructor in advance.

Assessments:

There will be three types of assessments that will contribute to the grade. They are:

1. Graded Homework
Online homework assignments will be posted on the D2L course homepage in the form of "Quizzes". You may use course materials when taking the quizzes; this includes your textbook, lecture notes, and your handwritten notes. You are not allowed to 'google' or otherwise search the web for answers. You should not ask other students for the answers. These assignments are intended to help YOU learn the material. Send me an email if you are locked out or have other computer difficulties that prevent you from completing the assignments on time.

If your computer is having issues or your Wi-Fi is a problem, **remember that there are computers in the library and elsewhere on campus that you can use.** You will have several days to complete these assignments - do not wait until the last 10 minutes to do them!

Note: Graded homework will not be accepted after the Answer Keys have been posted or given out in class!

2. Exams
There will be four exams during the semester = **Exams 1-3** and the **Final Exam** on the Final Exam day. The exams are **closed-book, in-class, and proctored**. The Final Exam will be cumulative, and taking it is mandatory! The lowest score you earn on **Exams 1-3** may be replaced with the final exam score.

3. Topic Presentation
Each student, either individually or in pairs, may deliver a presentation summarizing their chosen topic and facilitate a class discussion for 20 minutes. Presentations can be scheduled for either December 3 or December 5. There are four presentation slots available on each day. A sign-up sheet will be provided later.

The presentations should be well-prepared, concise, and include sufficient visual aids. The presentation will be evaluated by your classmates (40%) and the instructor (60%).

The following should be included in your presentation.
1. the nature of infection
2. Causative agents and their mechanisms of pathogenesis
3. Diagnosis
4. Treatment and prevention
5. One exemplary clinical case study.

Select from the following topics: Please refer to OpenStax Microbiology Chapters 21~26

https://openstax.org/details/books/microbiology/

Skin and Wound infections
Bone and Joint infections

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Eye, Ear, and Sinus infections
Dental and Periodontal infections
Respiratory infections
Enteric infections
Urinary tract infections
Genital infections
Central nervous system infections

Timeline for Presentation:

Topic selection (10 %): due Oct. 7

Your topic selection comprises 10% of your topic presentation grade. To earn your topic selection points, you have to submit a PDF file of your case study source. Your case study source should be a scientific journal article.

Presentation outline (10 %): due Nov. 5

Presentation (80 %): on Dec 3 or Dec 5

EXAMS ARE SCHEDULED FOR THE FOLLOWING DATES

Assessment	Date/Time
Homework	Various times
Exam 1	Sep. 26 11:00 AM-12:15 PM
Exam 2	Oct. 24 11:00 AM-12:15 PM
Exam 3	Nov. 21 11:00 AM-12:15 PM
Presentation	Dec 3/5
Final Exam	Dec 10 **10:30 AM-12:30 PM**

GRADING

Final grades in this course will be based on the following scale:

	Percentage of Final Grade
Graded Homework (1~10)	20%
Exams 1-3	45% (15 % each)
Final Exam	20%
Presentation	15%

A = 90%-100%

B = 80%-89%

C = 70%-79%

D = 60%-69%

F = 59% or Below

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COURSE OUTLINE / CALENDAR

Week	Lectures	Textbook	
Module 1: General Introduction			
1 8/26	Syllabus & Intro to Medical Microbiology Nature of infection (Lectures 1, 2)	 Chapter 1	
2 9/2	Immune Response (Lectures 3,4)	Chapter 2	 HW #1
3 9/9	Growth Control Bacteria-Basic Concept (Lectures 5, 6)	Chapter 3 Chapter 21	 HW #2
Module 2: Pathogenic bacteria			
4 9/16	Pathogenesis of bacterial infections Antibacterial agents and Resistance (Lecture 7, 8)	Chapter 22 Chapter 23	 HW #3
5 9/23	Staphylococci (Lecture 9) **Exam 1 (9/26)**	 Chapter 24	
6 9/30	Streptococci/Enterococci Corynebacterium & Listeria (Lectures 10, 11)	Chapter 25 Chapter 26	 HW #4
7 10/7	Mycobacteria spp. Haemophilus & Bordetella, (Lectures 12, 13) **Presentation topic selection due 10/7**	Chapter 27 Chapter 31	 HW #5
8 10/14	STDs: Neisseria, Chlamydia & Treponema Vibrio, Campylobacter & Helicobacter (Lectures 14, 15)	Chapter 30 Chapter 32	 HW #6
9 10/21	Enterobacteriaceae 1 (Lecture 16) **Exam 2 (10/24)**	Chapter 33	 HW #7
10 10/28	Enterobacteriaceae 2 Spirochetes, Rickettsia (Lecture 17,18)	Chapter 36 Chapter 40	
Module 3: Pathogenic virus and fungi			
11 11/4	Pathogenesis of fungal infection Antifungal agent and resistance (Lecture 19, 20) **Presentation outlines due 11/5**	Chapter 42, 43 Chapter 44	 HW #8
12 11/11	Virus: Introduction Pathogenesis of viral infection (Lecture 21, 22)	Chapter 6 Chapter 7	 HW #9
13 11/18	Antiviral Agents and resistance (Lecture 23) **Exam 3 (11/21)**	Chapter 8	 HW #10
14 11/25	Pathogenic viruses (Lecture 24) **Thanksgiving**		
15 12/2	**Presentation 12/3 or 12/5**		
12/10	**FINAL EXAM**	Cumulative	

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TECHNOLOGY REQUIREMENTS

LMS

All course sections offered by Texas A&M University-Commerce have a corresponding course shell in the myLeo Online Learning Management System (LMS). Below are technical requirements

LMS Requirements:
https://community.brightspace.com/s/article/Brightspace-Platform-Requirements

LMS Browser Support:
https://documentation.brightspace.com/EN/brightspace/requirements/all/browser_support.htm

Zoom Video Conferencing Tool
https://inside.tamuc.edu/campuslife/CampusServices/CITESupportCenter/Zoom_Account.aspx?source=universalmenu

ACCESS AND NAVIGATION

You will need your campus-wide ID (CWID) and password to log into the course. If you do not know your CWID or have forgotten your password, contact the Center for IT Excellence (CITE) at 903.468.6000 or helpdesk@tamuc.edu**.**

Note: Personal computer and internet connection problems do not excuse the requirement to complete all course work in a timely and satisfactory manner. Each student needs to have a backup method to deal with these inevitable problems. These methods might include the availability of a backup PC at home or work, the temporary use of a computer at a friend's home, the local library, office service companies, Starbucks, a TAMUC campus open computer lab, etc.

COMMUNICATION AND SUPPORT

If you have any questions or are having difficulties with the course material, please contact your Instructor.

Technical Support

If you are having technical difficulty with any part of Brightspace, please contact Brightspace Technical Support at 1-877-325-7778. Other support options can be found here:

https://community.brightspace.com/support/s/contactsupport

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COURSE AND UNIVERSITY PROCEDURES/POLICIES

Syllabus Change Policy

The syllabus is a guide. Circumstances and events, such as student progress, may make it necessary for the instructor to modify the syllabus during the semester. Any changes made to the syllabus will be announced in advance.

University Specific Procedures

Student Conduct

All students enrolled at the University shall follow the tenets of common decency and acceptable behavior conducive to a positive learning environment. The Code of Student Conduct is described in detail in the Student Guidebook.
http://www.tamuc.edu/Admissions/oneStopShop/undergraduateAdmissions/studentGuidebook.aspx

Students should also consult the Rules of Netiquette for more information regarding how to interact with students in an online forum: https://www.britannica.com/topic/netiquette

TAMUC Attendance

For more information about the attendance policy please visit the Attendance webpage and Procedures 13.99.99.R0.01
http://www.tamuc.edu/admissions/registrar/generalInformation/attendance.aspx

http://www.tamuc.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/13students/academic/13.99.99.R0.01.pdf

Academic Integrity

Students at Texas A&M University-Commerce are expected to maintain high standards of integrity and honesty in all of their scholastic work. For more details and the definition of academic dishonesty see the following procedures:

Undergraduate Academic Dishonesty 13.99.99.R0.03
Undergraduate Student Academic Dishonesty Form

http://www.tamuc.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/documents/13.99.99.R0.03UndergraduateStudentAcademicDishonestyForm.pdf

Graduate Student Academic Dishonesty Form

http://www.tamuc.edu/academics/graduateschool/faculty/GraduateStudentAcademicDishonestyFormold.pdf

http://www.tamuc.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/13students/undergraduates/13.99.99.R0.03UndergraduateAcademicDishonesty.pdf

Students with Disabilities-- ADA Statement

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 have a disability requiring an accommodation, please contact:

Office of Student Disability Resources and Services
Texas A&M University-Commerce
Velma K. Waters Library Rm 162
Phone (903) 886-5150 or (903) 886-5835
Fax (903) 468-8148
Email: studentdisabilityservices@tamuc.edu
Website: Office of Student Disability Resources and Services
http://www.tamuc.edu/campusLife/campusServices/studentDisabilityResourcesAndServices/

Nondiscrimination Notice

Texas A&M University-Commerce will comply in the classroom, and in online courses, with all federal and state laws prohibiting discrimination and related retaliation on the basis of race, color, religion, sex, national origin, disability, age, genetic information or veteran status. Further, an environment free from discrimination on the basis of sexual orientation, gender identity, or gender expression will be maintained.

Campus Concealed Carry Statement

Texas Senate Bill - 11 (Government Code 411.2031, et al.) authorizes the carrying of a concealed handgun in Texas A&M University-Commerce buildings only by persons who have been issued and are in possession of a Texas License to Carry a Handgun. Qualified law enforcement officers or those who are otherwise authorized to carry a concealed handgun in the State of Texas are also permitted to do so. Pursuant to Penal Code (PC) 46.035 and A&M-Commerce Rule 34.06.02.R1, license holders may not carry a concealed handgun in restricted locations.

For a list of locations, please refer to the Carrying Concealed Handguns On Campus document and/or consult your event organizer.

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Web url:
http://www.tamuc.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/34SafetyOfEmployeesAndStudents/34.06.02.R1.pdf

Pursuant to PC 46.035, the open carrying of handguns is prohibited on all A&M-Commerce campuses. Report violations to the University Police Department at 903-886-5868 or 9-1-1.

A&M-Commerce Supports Students' Mental Health

The Counseling Center at A&M-Commerce, located in the Halladay Building, Room 203, offers counseling services, educational programming, and connection to community resources for students. Students have 24/7 access to the Counseling Center's crisis assessment services by calling 903-886-5145. For more information regarding Counseling Center events and confidential services, please visit **www.tamuc.edu/counsel**

AI use policy [Draft 2, May 25, 2023]

Texas A&M University-Commerce acknowledges that there are legitimate uses of Artificial Intelligence, ChatBots, or other software that has the capacity to generate text, or suggest replacements for text beyond individual words, as determined by the instructor of the course.

Any use of such software must be documented. Any undocumented use of such software constitutes an instance of academic dishonesty (plagiarism).

Individual instructors may disallow entirely the use of such software for individual assignments or for the entire course. Students should be aware of such requirements and follow their instructors 'guidelines. If no instructions are provided the student should assume that the use of such software is disallowed.

In any case, students are fully responsible for the content of any assignment they submit, regardless of whether they used an AI, in any way. This specifically includes cases in which the AI plagiarized another text or misrepresented sources.

13.99.99.R0.03 Undergraduate Academic Dishonesty

13.99.99.R0.10 Graduate Student Academic Dishonesty