

MICR 5031
Pathogenic Microbiology
SYLLABUS and SCHEDULE
Fall 2022

CLASS DAYS and TIMES: Mondays 9:00 – 10:00 and 10:15 - 11:15 am
Wednesdays 9:00-10:00 am (with some exceptions)
Notes: Please review the schedule carefully as certain Wednesdays have 2 meetings to accommodate holidays

CLASSROOM: “Alamo” Conference room-5.028V

COURSE FACULTY:

Brian Wickes (Course Director)	Wickes@uthscsa.edu
Evelien Bunnik, PhD	Bunnik@UTHSCSA.EDU
Ann Griffith, PhD	griffitha3@uthscsa.edu
David Kadosh, PhD	Kadosh@UTHSCSA.EDU
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Alexei Tumanov, PhD	tumanov@uthscsa.edu
Brian Wickes, PhD	Wickes@UTHSCSA.EDU
Yan Xiang, PhD	XiangY@UTHSCSA.EDU
Guangming Zhong MD, PhD	Zhongg@UTHSCSA.EDU

OFFICE LOCATIONS and HOURS: To be arranged with individual faculty

TELEPHONE NUMBERS: Please contact faculty by e-mail or by visiting their offices

READ THIS SYLLABUS CAREFULLY - YOU ARE RESPONSIBLE FOR ITS CONTENTS.

COURSE DESCRIPTION AND OBJECTIVES:

Discussions of the relevant principles of Molecular Biology and associated techniques. Descriptions of basic microbial structure, physiology, and genetics, and mechanisms by which bacterial, viral, fungal, and parasitic pathogens cause disease.

By the end of this course, each student should be able to:

- Understand the key principles in Molecular Biology
- Understand the basic concepts of microbial pathogenesis.
- Understand the basic mechanisms pathogens use to interact with the immune system.
- Understand basic aspects of microbial structure, function, physiology and genetics.

PRE-REQUISITES: None

SEMESTER CREDIT HOURS: 3

MATERIALS: There are no specific materials required for this course.

COURSE ORGANIZATION:

The main teaching modalities used in this course are:

- 1) Didactic lectures designed to convey information to the students in traditional lecture format.
- 2) Classroom discussions of manuscripts and homework problems designed to engage the student in active learning.

COMPUTER ACCESS: Students will need access to a computer and the internet.

READING ASSIGNMENTS: If a particular class has a required reading assignment, it will be distributed by individual faculty prior to class.

ATTENDANCE:

Although attendance is not taken, your presence in class is expected since there is no single textbook that covers the material presented in this course. If a student misses class due to severe illness or other extreme cause, they are still responsible for the content presented on that day. There are several classes in which grades are assigned for participation in research paper discussions. There will be no make-up available for missed paper discussions; if you miss a class with a graded paper discussion, you will get no credit for that assignment. Attendance at all in-class exams is mandatory. If a student misses a scheduled exam, a makeup exam will not be given, except under extraordinary circumstances. The definition of “extraordinary circumstances” is solely at the discretion of the Course Director, but would include the sudden onset of an incapacitating illness or the recent death of an immediate family member.

TEXTBOOKS:

Required: None

Recommended: None

GRADING POLICIES AND EXAMINATION PROCEDURES:

The course will have three exams. Exam #1 will constitute 33% of the course grade; exam #2 will be 37% of the course grade; exam #3 will be 30% of the course grade. Each exam will have an in class component and a take-home component. The exam content can take any form (long answer, short answer, multiple-choice, etc.) at each instructor’s discretion. For the take-home exams, you will have a minimum of 3 days to complete the exam. Attendance at all in-class exams is mandatory. If a student misses a scheduled exam, a makeup exam will not be given, except under extraordinary circumstances. The definition of “extraordinary circumstances” is solely at the discretion of the Course Director, but would include the sudden onset of an incapacitating illness or the recent death of an immediate family member.

Grading System

The expected grading scale is shown below, although the Course Director reserves the right to “curve” the grade, if appropriate.

A = 90-100%

B = 80-89%

C = 71-79%

F = at or below 70%

USE OF ELECTRONIC DEVICES:

The use of any recording device is not allowed without the express consent of each individual instructor. Cell phones may not be used in class and must be shut off during class. Computers or tablets can be used in class

for class-related purposes and note taking. They may not be used for e-mail, web surfing, or any activity not related to class.

COMMUNICATION POLICY:

All course communication will be done by e-mail using the student's Livemail account. Thus, it is each student's responsibility to check their e-mail accounts daily as they are responsible for materials, assignments, notifications, and tests distributed by e-mail. In turn, Dr. Wickes, the Course Director, will check his uthscsa e-mail several times a day in case any pressing questions or concerns arise. Although e-mail is often the easiest way to communicate, it should be emphasized that Dr. Wickes's office door is always "open" if you would prefer to stop by to discuss something in person.

REQUESTS FOR ACCOMODATIONS FOR DISABILITIES:

In accordance with HOP policy 4.2.3, **Request for Accommodation Under the ADA and the ADA Amendments Act of 2008 (ADAAA)**, any student requesting accommodation must submit the appropriate request for accommodation under the American with Disabilities Act (ADA, form 100). to the appropriate Associate Dean of the Graduate School and a copy to the ADA Coordinator. Additional information may be obtained at <http://uthscsa.edu/eeo/request.asp>.

ACADEMIC INTEGRITY AND PROFESSIONALISM:

Any student who commits an act of academic dishonesty is subject to discipline as prescribed by the UT System Rules and Regulations of the Board of Regents. Academic dishonesty includes, but is not limited to, cheating, plagiarism, collusion, the submission for credit of any work or materials that are attributable in whole or in part to another person, taking an exam for another person, signing attendance sheets for another student, and any act designed to give unfair advantage to a student or the attempt to commit such an act. Additional information may be obtained at

<http://catalog.uthscsa.edu/generalinformation/generalacademicpolicies/academicdishonestypolicy/>

Failure to abide by any of these rules of Academic Integrity will result in a grade of zero for the exam in question and a student in breach of these Professional Standards may not receive an overall course grade higher than a "C".

TITLE IX AT UTHSCSA:

Title IX Defined:

Title of the Education Amendments of 1972 is a federal law that prohibits sex discrimination in education. It reads "no person in the United States shall, on the basis of sex, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any education program or activity receiving Federal financial assistance."

University of Texas Health Science Center San Antonio's Commitment:

University of Texas Health Science Center San Antonio (UTHSCSA) is committed to maintaining a learning environment that is free from discriminatory conduct based on gender. As required by Title IX, UTHSCSA does not discriminate on the basis of sex in its education programs and activities, and it encourages any student, faculty, or staff member who thinks that he or she has been subjected to sex discrimination, sexual harassment (including sexual violence) or sexual misconduct to immediately report the incident to the Title IX Director.

In an emergency, victims of sexual abuse should call 911. For non-emergencies, they may contact UPD at 210-567-2800. Additional information may be obtained at <http://students.uthscsa.edu/titleix/>

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Week	Date	Time	Topic	Special Comments	Instructor
Week 1	Mon 8/22	9:00 10:15	Introduction/ Business meeting Class #1 - Overview: Regulation and The Central Dogma of Molecular Biology		Course director Segovia
	Wed 8/24	9:00	Class #2 - Genome structure and genomics		Griffith
Week 2	Mon 8/29	9:00 10:15	Class #3 – Bacterial genetics, transposons and DNA rearrangements Class #4 - Prokaryotic transcriptional regulation		Segovia Segovia
	Wed 8/31	9:00	Class #5 - Whole genome analysis and cloning basics		Bunnik
Week 3	Mon 9/5	9:00	No Class Labor Day Holiday		
	Wed 9/7	9:00	Class #6 - Measuring RNA levels and protein-DNA interactions		Tumanov
Week 4	Mon 9/12	9:00 10:15	Class #7 - Eukaryotic transcription and its regulation Class #8 – How to write a research proposal.		Kadosh Wickes
	Wed 9/14	9:00	Class #9 - Transcriptional silencing and epigenetics		Xu
Week 5	Mon 9/19	9:00 10:15	Class #10 - Assessing protein-protein interactions and altering mammalian cell genomes <i>in vitro</i> Class #11 - DNA mutation and repair and making mutations in animal models		Tumanov Tumanov
	Wed 9/21	9:00	Class # 12 – Enzymes, <i>in vitro</i> assays, microscopy		Tumanov
Week 6	Mon 9/26	9:00 10:15	Class # 13 – Study session classes 1-12. Interactive Q&A Bacteria: Identification and Structures		Staff Kannan
	Wed 9/28	9:00	Overview of Bacterial Physiology		Kannan
Week 7	Mon 10/3	9:00 – 11:00	Workshop-how to review a paper Take home exam 1 e-mailed to the class		Leadbetter/Koroleva Course Director

	Wed 10/5	9:00	Overview of Bacterial Pathogenic Mechanisms		Kannan-confirmed/calenar
Week 8	Mon 10/10		Take Home Exam 1 due by 9:00 am		
	Mon 10/10	9:00 10:15	TLR signaling and inflammation (plus choosing paper discussion groups) Atypical pathogens I		Segovia Kannan
	Wed 10/12	9:00	Atypical pathogens II		Kannan
Week 9	Mon 10/17	9:00 10:15	Bacterial Toxins I Bacterial Toxins II		Kannan Kannan
	Wed 10/19	9:00	Topics in pathogenesis I	Group Paper Presentations and Discussion	Kannan
Week 10	Mon 10/24	9:00 10:15	Topics in pathogenesis II Topics in pathogenesis III	Group Paper Presentations and Discussion	Kannan Kannan
	Wed 10/26	9:00 10:15	Colonization and tissue damage Intracellular pathogens and <i>Chlamydia</i> I	Two Wednesday Classes	Zhong Zhong
Week 11	Mon 10/31	9:00 10:15	Intracellular pathogens and <i>Chlamydia</i> II Intracellular pathogens and <i>Chlamydia</i> III	Group Paper Presentations and Discussion	Zhong Zhong
	Wed 11/02	9:00	Intracellular pathogens and <i>Chlamydia</i> IV	Group Paper Presentations and Discussion	Zhong
Week 12	Mon 11/07	9:00 – 11:00	Take home exam 2 e-mailed to the class, In class exam-2		
	Wed 11/09	9:00 10:15	Eukaryotic growth and cell division Mycology I	Two Wednesday Classes	Kadosh Wickes
Week 13	Mon 11/14		Take Home Exam 2 due by 9:00 am		
	Mon 11/14	9:00 10:15	Mycology II Mycology III		Kadosh Wickes
	Wed 11/16	9:00	Mycology IV		Kadosh
Week 14	Mon 11/21	9:00 10:15	Parasitology I Parasitology II		Bunnik Bunnik
	Wed 11/23	9:00	No Class		
Week 15	Mon 11/28	9:00 10:15	Mycology V Introduction to virology I		Kadosh Xiang
	Wed 11/30	9:00	Introduction to virology II		Xiang-tentative
Week 16	Mon 12/5	9:00 – 11:00	Introduction to virology III Take home exam 3 e-mailed to the class		Xiang
	Wed 12/7	9:00	In class exam 3	1 hour exam	
	Fri 12/12		Take Home Exam 3 due by 9:00 am		

