

# Pathogenic Bacteriology 4317/5317 Spring 2017

**“Infectious disease is one of the few genuine adventures left in the world. The dragons are all dead and the lance grows rusty in the chimney corner. ... About the only sporting proposition that remains unimpaired by the relentless domestication of a once free-living human species is the war against those ferocious little fellow creatures, which lurk in dark corners and stalk us in the bodies of rats, mice and all kinds of domestic animals; which fly and crawl with the insects, and waylay us in our food and drink and even in our love.”**

**-Hans Zinsser, Rats Lice and History 1935**

**Instructor(s):** Dr. Michael Roner

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**Office Telephone Number:** 817-272-1302

**Email Address:** roner@uta.edu

**Faculty Profile:** <https://www.uta.edu/profiles/dr-michael-roner>

**Office Hours:** TuTh 12:00-1:30 PM

**Section Information:** Biol 4317-001/5317-001, Introduction to Virology

**Time and Place of Class Meetings:**, TuTh 9:30-11:00.

**Description of Course Content:** This course is a study of medically important microorganisms. Special emphasis will be placed on recent advances in the molecular genetics of host pathogen interactions. This course will focus on the various strategies microorganisms use to attach, invade and multiply in a host. Knowledge of these mechanisms of pathogenesis is being used to develop prevention and treatment strategies for a number of diseases. We will use current literature and case studies to focus on selected model organisms that will introduce the major concepts in microbial pathogenesis.

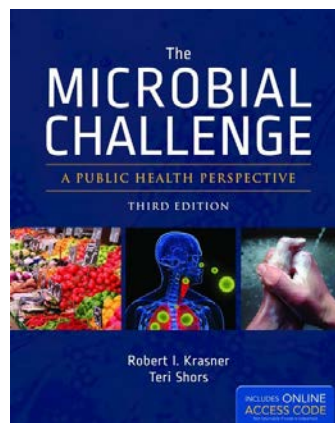
**Student Learning Outcomes:** Microbes play a highly significant role in our daily lives as agents of infectious disease and are a major public health concern. The third edition of *The Microbial Challenge: A Public Health Perspective* addresses this topic and has been extensively revised and updated with the latest data in a fast-paced field. It focuses on human-microbe interactions and considers bacterial, viral, prion, protozoan, fungal and helminthic (worm) diseases. A chapter on beneficial aspects of microbes makes it clear that not all microbes are disease producers and that microbes are necessary for the sustenance of life on Earth. The response of the immune system, concepts of epidemiology, and measures of control from the individual to the international level to thwart potentially life-threatening epidemics are described. Sections on fungi and fungal diseases are new.

The intended **learning outcomes** are as follows. By the end of the course students should be able to;

- Explain relationships and apply appropriate terminology relating to the structure, metabolism, genetics, and ecology of prokaryotic microorganisms, eukaryotic microorganisms, and viruses.
- Explain interactions between opportunistic and pathogenic microorganisms and susceptible hosts in contacts that result in infection and/or disease and apply these interactions to disease symptoms.
- Explain innate and adaptive immune responses and apply this understanding to the infectious disease process as well as the prevention and control of infectious diseases.
- Explain principles of physical and chemical methods used in the control of microorganisms and apply this understanding to the prevention and control of infectious diseases.
- Demonstrate an appreciation and understanding of clinical laboratory skills and techniques related to the isolation, staining, identification, assessment of metabolism, and control of microorganisms.
- Interpret and draw appropriate conclusions from laboratory results.
- Analyze and distinguish therapeutic treatments for microbial infections, and distinguish when a vaccine, antibiotic, or other therapy is likely to be the most appropriate response.
- Specify the role of ecology and evolution in the spread of infectious diseases, comparing the role of transmission, population size and susceptibility, and virulence in endemic disease, epidemic disease, emerging diseases, and bioterrorism
- Develop the ability to work both independently and with others in teams and study groups.
- Develop an information base for making personal health decisions in regard to infectious diseases.

#### **Required Textbooks and Other Course Materials:**

<http://www.jblearning.com/catalog/9781449673758/>



**Descriptions of major assignments and examinations:** Final course grades will be based on 2 exams spread across the semester and an in class presentation, **or** the final exam and an in class presentation. Grades will be calculated as follows: if you have taken Exams 1, 2 and an in class presentation and are satisfied with your grade, you do not need to take the comprehensive final exam. If you elect to take the final exam, your grade on the final exam and an in class presentation, or your grade on the first two (2) exams and an in class presentation, whichever is greater, will be the grade you earn for this course. The optional final exam gives a student an opportunity to "redeem" a poor exam 1 or 2 performance, or "replace" an unexcused missed exam. Please remember the final exam is COMPREHENSIVE and requires significantly more effort than the two (2) regular exams! Students are encouraged to study and complete the two exams during the regular course period and not depend on the final exam.

**Attendance:** At The University of Texas at Arlington, taking attendance is not required but attendance is a critical indicator in student success. Each faculty member is free to develop his or her own methods of evaluating students' academic performance, which includes establishing course-specific policies on attendance. As the instructor of this section, **I strongly encourage students to attend all lectures. I allow students to attend class at their own discretion.** However, while UT Arlington does not require instructors to take attendance in their courses, the U.S.

Department of Education requires that the University have a mechanism in place to mark when Federal Student Aid recipients “begin attendance in a course.” UT Arlington instructors will report when students begin attendance in a course as part of the final grading process. Specifically, when assigning a student a grade of F, faculty report the last date a student attended their class based on evidence such as a test, participation in a class project or presentation, or an engagement online via Blackboard. This date is reported to the Department of Education for federal financial aid recipients.

**Grading:**

**Undergraduate student grading**

**Option 1**

2 exams 50 points each	100 points
Completion of “Extra credit” 5 points/exam	10 points
Presentation in Class	50 points
Final grade based on 150 points (160 points possible)	

**Option 2**

Final exam	50 points
Presentation in Class	50 points
Final grade based on 100 points	

**Graduate student grading**

**Option 1**

2 exams 55 points each	110 points
2 take-home exams 50 points each	100 points
Presentation in Class	50 points
Final grade based on 260 points	

**Option 2**

Final exam	50 points
2 take-home exams 50 points each	100 points
Presentation in Class	50 points
Final grade based on 200 points	

**FINAL GRADES WILL BE ASSIGNED AS FOLLOWS:**

<b>100%</b>	-	<b>89.51%</b>	<b>A</b>
<b>89.50%</b>	-	<b>79.51%</b>	<b>B</b>
<b>79.50%</b>	-	<b>69.51%</b>	<b>C</b>

69.50%	-	59.51%	D
<59.50%			F

**Make-up Exams:** Make-up exams will be allowed only in extreme circumstances at the discretion of the Instructor. You should have a doctor's note in case of illness. **Notify me (by email, phone, note etc. AS SOON AS you are aware of a problem, prior to the exam. Missed exams will receive a score/grade of zero "0").**

**Expectations for Out-of-Class Study:** Beyond the time required to attend each class meeting, students enrolled in this course should expect to spend at least an additional **9** hours per week of their own time in course-related activities, including reading required materials, completing assignments, preparing for each new lecture at least the day before the lecture.

**Grade Grievances:** Any appeal of a grade in this course must follow the procedures and deadlines for grade-related grievances as published in the current undergraduate / graduate catalog. For undergraduate courses, see For undergraduate courses, see <http://catalog.uta.edu/academicregulations/grades/#undergraduatetext>; for graduate courses, see <http://catalog.uta.edu/academicregulations/grades/#graduatetext>.

**Drop Policy:** Students may drop or swap (adding and dropping a class concurrently) classes through self-service in MyMav from the beginning of the registration period through the late registration period. After the late registration period, students must see their academic advisor to drop a class or withdraw. Undeclared students must see an advisor in the University Advising Center. Drops can continue through a point two-thirds of the way through the term or session. It is the student's responsibility to officially withdraw if they do not plan to attend after registering. **Students will not be automatically dropped for non-attendance.** Repayment of certain types of financial aid administered through the University may be required as the result of dropping classes or withdrawing. For more information, contact the Office of Financial Aid and Scholarships (<http://wweb.uta.edu/aao/fao/>).

**Disability Accommodations:** UT Arlington is on record as being committed to both the spirit and letter of all federal equal opportunity legislation, including *The Americans with Disabilities Act (ADA)*, *The Americans with Disabilities Amendments Act (ADAAA)*, and *Section 504 of the Rehabilitation Act*. All instructors at UT Arlington are required by law to provide "reasonable accommodations" to students with disabilities, so as not to discriminate on the basis of disability. Students are responsible for providing the instructor with official notification in the form of a letter certified by the **Office for Students with Disabilities (OSD)**. Students experiencing a range of conditions (Physical, Learning, Chronic Health, Mental Health, and Sensory) that may cause diminished academic performance or other barriers to learning may seek services and/or accommodations by contacting:

**The Office for Students with Disabilities, (OSD)** [www.uta.edu/disability](http://www.uta.edu/disability) or calling 817-272-3364. Information regarding diagnostic criteria and policies for obtaining disability-based academic accommodations can be found at [www.uta.edu/disability](http://www.uta.edu/disability).

**Counseling and Psychological Services, (CAPS)** [www.uta.edu/caps/](http://www.uta.edu/caps/) or calling 817-272-3671 is also available to all students to help increase their understanding of personal issues, address mental and behavioral health problems and make positive changes in their lives.

**Non-Discrimination Policy:** *The University of Texas at Arlington does not discriminate on the basis of race, color, national origin, religion, age, gender, sexual orientation, disabilities, genetic information, and/or veteran status in its educational programs or activities it operates. For more information, visit [uta.edu/eos](http://uta.edu/eos).*

**Title IX Policy:** The University of Texas at Arlington (“University”) is committed to maintaining a learning and working environment that is free from discrimination based on sex in accordance with Title IX of the Higher Education Amendments of 1972 (Title IX), which prohibits discrimination on the basis of sex in educational programs or activities; Title VII of the Civil Rights Act of 1964 (Title VII), which prohibits sex discrimination in employment; and the Campus Sexual Violence Elimination Act (SaVE Act). Sexual misconduct is a form of sex discrimination and will not be tolerated. *For information regarding Title IX, visit [www.uta.edu/titleIX](http://www.uta.edu/titleIX) or contact Ms. Jean Hood, Vice President and Title IX Coordinator at (817) 272-7091 or [jmhood@uta.edu](mailto:jmhood@uta.edu).*

**Academic Integrity:** Students enrolled all UT Arlington courses are expected to adhere to the UT Arlington Honor Code:

*I pledge, on my honor, to uphold UT Arlington’s tradition of academic integrity, a tradition that values hard work and honest effort in the pursuit of academic excellence.*

*I promise that I will submit only work that I personally create or contribute to group collaborations, and I will appropriately reference any work from other sources. I will follow the highest standards of integrity and uphold the spirit of the Honor Code.*

UT Arlington faculty members may employ the Honor Code in their courses by having students acknowledge the honor code as part of an examination or requiring students to incorporate the honor code into any work submitted. Per UT System *Regents’ Rule* 50101, §2.2, suspected violations of university’s standards for academic integrity (including the Honor Code) will be referred to the Office of Student Conduct. Violators will be disciplined in accordance with University policy, which may result in the student’s suspension or expulsion from the University. Additional information is available at <https://www.uta.edu/conduct/>.

**Students caught cheating and/or violating the Honor Code for an individual exam will have the exam confiscated and will receive a score/grade of zero “0” for that exam.**

**Electronic Communication:** UT Arlington has adopted MavMail as its official means to communicate with students about important deadlines and events, as well as to transact university-related business regarding financial aid, tuition, grades, graduation, etc. All students are assigned a MavMail account and are responsible for checking the inbox regularly. There is no additional charge to students for using this account, which remains active even after graduation. Information about activating and using MavMail is available at <http://www.uta.edu/oit/cs/email/mavmail.php>.

**Campus Carry:** Effective August 1, 2016, the Campus Carry law (Senate Bill 11) allows those licensed individuals to carry a concealed handgun in buildings on public university campuses, except in locations the University establishes as prohibited. Under the new law, openly carrying handguns is not allowed on college campuses. For more information, visit <http://www.uta.edu/news/info/campus-carry/>

**Student Feedback Survey:** At the end of each term, students enrolled in face-to-face and online classes categorized as “lecture,” “seminar,” or “laboratory” are directed to complete an online Student Feedback Survey (SFS). Instructions on how to access the SFS for this course will be sent directly to each student through MavMail approximately 10 days before the end of the term. Each student’s feedback via the SFS database is aggregated with that of other students enrolled in the course. Students’ anonymity will be protected to the extent that the law allows. UT Arlington’s effort to solicit, gather, tabulate, and publish student feedback is required by state law and aggregate results are posted online. Data from SFS is also used for faculty and program evaluations. For more information, visit <http://www.uta.edu/sfs>.

**Final Review Week:** for semester-long courses, a period of five class days prior to the first day of final examinations in the long sessions shall be designated as Final Review Week. The purpose of this week is to allow students sufficient time to prepare for final examinations. During this week, there shall be no scheduled activities such as required field trips or performances; and no instructor shall assign any themes, research problems or exercises of similar scope that have a completion date during or following this week *unless specified in the class syllabus*. During Final Review Week, an instructor shall not give any examinations constituting 10% or more of the final grade, except makeup tests and laboratory examinations. In addition, no instructor shall give any portion of the final examination during Final Review Week. During this week, classes are held as scheduled. In addition, instructors are not required to limit content to topics that have been previously covered; they may introduce new concepts as appropriate.

**Emergency Exit Procedures:** Should we experience an emergency event that requires us to vacate the building, students should exit the room and move toward the nearest exit, which is located at the nearest end of the hallway, to the right, as one exits the classroom. When exiting the building during an emergency, one should never take an elevator but should use the stairwells. Faculty members and instructional staff will assist students in selecting the safest route for evacuation and will make arrangements to assist individuals with disabilities.

**Student Support Services:** UT Arlington provides a variety of resources and programs designed to help students develop academic skills, deal with personal situations, and better understand concepts and information related to their courses. Resources include tutoring, major-based learning centers, developmental education, advising and mentoring, personal counseling, and federally funded programs. For individualized referrals, students may visit the reception desk at University College (Ransom Hall), call the Maverick Resource Hotline at 817-272-6107, send a message to resources@uta.edu, or view the information at <http://www.uta.edu/universitycollege/resources/index.php>.

**The IDEAS Center** (2<sup>nd</sup> Floor of Central Library) offers **free** tutoring to all students with a focus on transfer students, sophomores, veterans and others undergoing a transition to UT Arlington. To schedule an appointment with a peer tutor or mentor email [IDEAS@uta.edu](mailto:IDEAS@uta.edu) or call (817) 272-6593.

**The English Writing Center (411LIBR):** The Writing Center Offers free tutoring in 20-, 40-, or 60-minute face-to-face and online sessions to all UTA students on any phase of their UTA coursework. Our hours are 9 am to 8 pm Mon.-Thurs., 9 am-3 pm Fri. and Noon-6 pm Sat. and Sun. Register and make appointments online at <http://uta.mywconline.com>. Classroom Visits, workshops, and specialized services for graduate students are also available. Please see [www.uta.edu/owl](http://www.uta.edu/owl) for detailed information on all our programs and services.

The Library's 2<sup>nd</sup> floor Academic Plaza offers students a central hub of support services, including IDEAS Center, University Advising Services, Transfer UTA and various college/school advising hours. Services are available during the library's hours of operation. <http://library.uta.edu/academic-plaza>

### **After Hours Safety Escort**

**The Sam Mav Escort service** provides a service to assist students, faculty, staff and campus visitors to reach their destinations after regular business hours. The hours of service are 7:00 p.m. to 1:00 a.m., Sunday through Saturday. 817-272-3381



## Course Schedule

### Tentative Lecture Schedule

Week 1	Jan 17	Introduction
	Jan 19	Chapter 1
Week 2	Jan 24	Chapter 2
	Jan 26	Chapter 3
Week 3	Jan 31	Chapter 4
	Feb 2	Chapter 4
Week 4	Feb 7	Chapter 7
	Feb 9	Chapter 7
Week 5	Feb 14	Chapter 8
	Feb 16	Chapter 8
Week 6	Feb 21	<b>Exam 1</b>
	Feb 23	Chapter 9
Week 7	Feb 28	Chapter 9
	Mar 2	Chapter 9
Week 8	Mar 7	Chapter 9
	Mar 9	Chapter 9
Week 9	<b>Mar 14</b>	<b>Spring Break</b>
	<b>Mar 16</b>	<b>Spring Break</b>
Week 10	Mar 21	Chapter 13
	Mar 23	Chapter 15
Week 11	Mar 28	<b>Exam 2</b>
	Mar 30	Student Presentations
Week 12	Apr 4	Student Presentations
	Apr 6	Student Presentations
Week 13	Apr 11	Student Presentations
	Apr 13	Student Presentations
Week 14	Apr 18	Student Presentations
	Apr 20	Student Presentations
Week 15	Apr 25	Student Presentations
	Apr 27	Student Presentations
Week 16	May 2	Student Presentations
	May 4	Student Presentations
	<b>Final Exam</b>	<b>Tuesday May 9, 8-10:00 AM</b>

*As the instructor for this course, I reserve the right to adjust this schedule in any way that serves the educational needs of the students enrolled in this course. –Michael R. Roner.*

**Emergency Phone Numbers:** In case of an on-campus emergency, call the UT Arlington Police Department at **817-272-3003** (non-campus phone), **2-3003** (campus phone). You may also dial 911. Non-emergency number 817-272-3381

## **Resources for Students**

### **Academic Help**

Academic Plaza Consultation Services [library.uta.edu/academic-plaza](http://library.uta.edu/academic-plaza)

Ask Us [ask.uta.edu/](http://ask.uta.edu/)

Library Tutorials [library.uta.edu/how-to](http://library.uta.edu/how-to)

Subject and Course Research Guides [libguides.uta.edu](http://libguides.uta.edu)

Subject Librarians [library.uta.edu/subject-librarians](http://library.uta.edu/subject-librarians)

### **Resources**

A to Z List of Library Databases [libguides.uta.edu/az.php](http://libguides.uta.edu/az.php)

Course Reserves [pulse.uta.edu/vwebv/enterCourseReserve.do](http://pulse.uta.edu/vwebv/enterCourseReserve.do)

FabLab [fablab.uta.edu/](http://fablab.uta.edu/)

Special Collections [library.uta.edu/special-collections](http://library.uta.edu/special-collections)

Study Room Reservations [openroom.uta.edu/](http://openroom.uta.edu/)

### **Teaching & Learning Services for Faculty**

Copyright Consultation [library-sc@listserv.uta.edu](mailto:library-sc@listserv.uta.edu)

Course Research Guide Development, Andy Herzog [amherzog@uta.edu](mailto:amherzog@uta.edu) or your subject librarian

Data Visualization Instruction, Peace Ossom-Williamson [peace@uta.edu](mailto:peace@uta.edu)

Digital Humanities Instruction, Rafia Mirza [rafia@uta.edu](mailto:rafia@uta.edu)

Graduate Student Research Skills Instruction, Andy Herzog [amherzog@uta.edu](mailto:amherzog@uta.edu) or your subject librarian

Project or Problem-Based Instruction, Gretchen Trkay [gtrkay@uta.edu](mailto:gtrkay@uta.edu)

Undergraduate Research Skills Instruction, Gretchen Trkay [gtrkay@uta.edu](mailto:gtrkay@uta.edu) or your subject librarian.