

**Introduction to Virology 4312/5304**  
**Spring 2019**  
**Tu/Th 8-9:20 AM**  
**SEIR 194**

**“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

**Office Number:** Room 330 Engineering Research Building

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

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

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

**Lab Website:** <http://www.texasroners.com/RonerLab/index.html>

**Office Hours:** TuTh 11-1 You are encouraged to stop by during office hours to talk about any problems or suggestions you may have concerning the course or just about things in general. If you cannot make it to my regular office hours, feel free to schedule an appointment.

**Section Information:** Biol 4312-001/5304-001, Introduction to Virology

**Time and Place of Class Meetings:**, TuTh 8-9:20. SEIR 194

**Description of Course Content:** This course is an introduction to molecular virology and the importance of viruses in human disease. It covers the methods available to study virus architecture, genome structure, replication strategies and virus interactions with cellular factors.

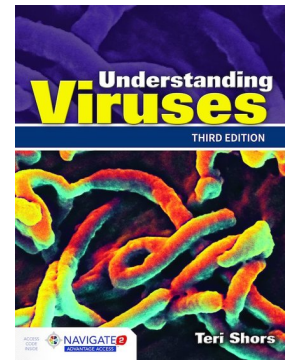
**Student Learning Outcomes:** Viruses have a major impact on humanity. They cause a number of acute diseases which can be serious or even life-threatening, but can also cause long-term complications such as paralysis, are involved in the induction of some cancers and may even cause some forms of diabetes and heart disease. The introduction of molecular approaches over the past 20 years has transformed our understanding of viruses and has provided a number of routes to the development of vaccines and anti-virus therapy. This course will give an introduction to the unique nature and importance of viruses then will show, using a number of detailed, specific examples, how molecular approaches are used in their study and what are the results of these approaches. The course will highlight molecular features which are critical in the induction of disease and also which current approaches are likely to lead to novel ways of controlling virus infections.

The intended **learning outcomes** are as follows. By the end of the course students should have knowledge of;

- Describe the differences in virus architecture and how these may be used to classify viruses
- Demonstrate the principles of molecular virology using specific examples
- Explain how gene expression is modulated in different virus – host cell systems
- Discuss some of the strategies adopted by viruses to replicate and express their genetic information
- Discuss the role of viruses in disease and how this relates to molecular interactions with the infected cell
- Discuss how an understanding of virus infections opens up the possibility of novel therapeutic approaches
- Design viral vectors for use in gene therapy
- Apply newly acquired knowledge of virus replication and host cell interactions in the development of antiviral agents

**Recommended Textbooks and Other Course Materials:**

<http://www.jblearning.com/catalog/9781284025927/>



**Descriptions of major assignments and examinations:** Your grade in this course will be based on your scores on four midterm exams, the optional final exam and your answers to thought questions asked on each midterm. The optional final exam gives a student an opportunity to "redeem" a poor exam 1, 2, 3 or 4 performance, or "replace" an unexcused missed exam. Please remember the final exam is COMPREHENSIVE and requires significantly more effort than the four (4) regular exams! Students are encouraged to study and complete the four exams during the regular course period and not depend on the final exam. The third option is that the final exam and your laboratory grade can together be used to determine your overall grade in the course. More details are provided below.

## Grading:

### Option 1

4 exams 50 points each	200 points
<i>Completion of "Extra credit" 5 points for four thought questions on each midterm</i>	20 points
Laboratory (20% of total)	50 points
Final grade based on 250 points (270 points possible)	

### Option 2

3 exams 50 points each	150 points
Final Exam 50 points	50 points
<i>Completion of "Extra credit" 5 points for four thought questions on each midterm</i>	20 points
Laboratory (20% of total)	50 points
Final grade based on 250 points (270 points possible)	

### Option 3

Final exam	80 points
Laboratory (20% of total)	20 points
Final grade based on 100 points	

## FINAL GRADES WILL BE ASSIGNED AS FOLLOWS:

100%	-	89.51%	A
89.50%	-	79.51%	B
79.50%	-	69.51%	C
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". Makeup exams will consist of 5 short answer essay questions.

**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.

**Lab safety training:** *You must complete all required lab safety training prior to entering the lab and beginning work.* Once completed, Lab Safety Training is valid for the remainder of the same academic year (i.e., through the following August) and must be completed anew in subsequent years. There are no exceptions to this University policy. Failure to complete the required training will preclude participation in any lab activities, including those for which a grade is assigned.

**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 <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://www.uta.edu/aao/faol/>).

**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). Only those students who have officially documented a need for an accommodation will have their request honored. 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:** Faculty are encouraged to discuss the Honor Code and the consequences of cheating, including plagiarism with their students.

*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 are encouraged to review these guides on plagiarism <http://libguides.uta.edu/researchprocess/plagiarism> <http://libguides.uta.edu/copyright/plagiarism>

**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:** 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](mailto:resources@uta.edu), or view the information at <http://www.uta.edu/universitycollege/resources/index.php>.

**University Tutorial & Supplemental Instruction (Ransom Hall 205):** UTSI offers a variety of academic support services for undergraduate students, including: 60 minute one-on-one [tutoring](#) sessions, [Start Strong](#) Freshman tutoring program, and [Supplemental Instruction](#). Office hours are Monday-Friday 8:00am-5:00pm. For more information visit [www.uta.edu/utsi](http://www.uta.edu/utsi) or call 817-272-2617.

**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. Students can drop in, or check the schedule of available peer tutors at [www.uta.edu/IDEAS](http://www.uta.edu/IDEAS), or call (817) 272-6593.

**The English Writing Center (411LIBR):** The Writing Center offers **FREE** tutoring in 15-, 30-, 45-, and 60-minute face-to-face and online sessions to all UTA students on any phase of their UTA coursework. Register and make appointments online at <https://uta.mywconline.com>. Classroom visits, workshops, and specialized services for graduate students and faculty 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>

**Librarian to Contact:** <http://www.uta.edu/library/help/subject-librarians.php> **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

<b>Week 1</b>	Jan 15	Introduction
	Jan 17	Chapter 1
<b>Week 2</b>	Jan 22	Chapter 1
	Jan 24	Chapter 2
<b>Week 3</b>	Jan 29	Chapter 2
	Jan 31	Chapter 3
<b>Week 4</b>	Feb 5	Chapter 4
	<b>Feb 7</b>	<b>Exam 1</b>
<b>Week 5</b>	Feb 12	Chapter 5
	Feb 14	Chapter 5
<b>Week 6</b>	Feb 19	Chapter 7
	Feb 21	Chapter 7
<b>Week 7</b>	Feb 26	Chapter 9
	Feb 28	Chapter 10
<b>Week 8</b>	<b>Mar 5</b>	<b>Exam 2</b>
	Mar 7	Chapter 11
<b>Week 9</b>	<b>Mar 12</b>	<b>Spring Break</b>
	<b>Mar 14</b>	<b>Spring Break</b>
<b>Week 10</b>	Mar 19	Chapter 11
	Mar 21	Chapter 15
<b>Week 11</b>	Mar 26	Chapter 15
	Mar 28	Chapter 15
<b>Week 12</b>	<b>Apr 2</b>	<b>Exam 3</b>
	Apr 4	Chapter 15
<b>Week 13</b>	Apr 9	Chapter 16
	Apr 11	Chapter 16
<b>Week 14</b>	Apr 16	Chapter 16
	Apr 18	Chapter 18
<b>Week 15</b>	Apr 23	Chapter 18
	<b>Apr 25</b>	<b>Exam 4</b>
<b>Week 16</b>	Apr 30	Dead Week No class - study for final exam
	May 2	Dead Week No class - study for final exam
<b>Week 17</b>	<b>Final Exam</b>	<b>Tuesday May 8, 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

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## **Library Home Page [library.uta.edu](http://library.uta.edu)**

### **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.

### **OTHER RESOURCES**

Environmental Health & Safety (<http://www.uta.edu/ehsafety>)