

# **Introduction to Virology 4312/5304**

Spring 2013

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

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**Office Hours:** Tu/Th 10-12:00

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**Section Information:** Biol 4312-001/5304-001

**Time and Place of Class Meetings:** LS 122, TuTh 8-9:20

## **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. 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.

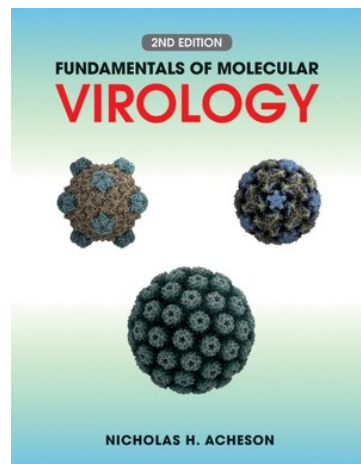
## **Student Learning Outcomes:**

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

## Required Textbooks and Other Course Materials:

<http://www.wiley-vch.de/publish/en/books/forthcomingTitles/LS00/0-470-90059-8/?sID=p2qlnooj68su7htl8qrrc2qjt3>



**Grading Policy:** Final course grades will be based on 3 exams spread across the semester, **or** the final exam. Grades will be calculated as follows: if you have taken Exams 1, 2 and 3 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 or your grade on the first three (3) exams, 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, 2, or 3 performance, or "replace" an unexcused missed exam. Please remember the final exam is **COMPREHENSIVE** and requires significantly more effort than the three (3) regular exams! Students are encouraged to study and complete the three exams during the regular course period and not depend on the final exam.

**Attendance Policy:** Students are strongly encouraged to attend **all** lectures.

**Audio Recording Policy:** Students may record class lectures if they have the express consent of the professor. Consent will be granted via email to the professor ([roner@uta.edu](mailto:roner@uta.edu)). **Students who have the express consent of a professor to record a class must make their own arrangements to record the class.** Permission to record a class applies exclusively to the student who received permission from the professor. The recording may not be accessed or utilized by any other individual. No replication of the recording or posting to the Web is permitted.

**Lecture Notes Policy:** Copies of lecture notes and exams that may be provided to the students may not be accessed or utilized by any other individual. The student may print a copy or maintain an electronic copy for use during the course, but no additional replication of the lecture notes and exams, or posting to the Web is permitted.

**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

**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://web.uta.edu/catalog/content/general/academic\\_regulations.aspx#10](http://web.uta.edu/catalog/content/general/academic_regulations.aspx#10); for graduate courses, see <http://www.uta.edu/gradcatalog/2012/general/regulations/#grades>.

**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/ses/fao>).

### **Important University Policies:**

**Americans with Disabilities Act:** The University of Texas at 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)*. 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 that disability. Any student requiring an accommodation for this course must provide the instructor with official documentation in the form of a letter certified by the staff in the Office for Students with Disabilities, University Hall 102. Only those students who have officially documented a need for an accommodation will have their request honored. 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) or by calling the Office for Students with Disabilities at (817) 272-3364.

**Academic Integrity:** All students enrolled in this course 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.*

Instructors may employ the Honor Code as they see fit in their courses, including (but not limited to) 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.

**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](mailto:resources@uta.edu), or view the information at [www.uta.edu/resources](http://www.uta.edu/resources).

**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>.

**Student Feedback Survey:** At the end of each term, students enrolled in classes categorized as lecture, seminar, or laboratory shall be directed to complete a 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 enters the SFS database anonymously and is aggregated with that of other students enrolled in the course. UT Arlington's effort to solicit, gather, tabulate, and publish student feedback is required by state law; students are strongly urged to participate. For more information, visit <http://www.uta.edu/sfs>.

**Final Review Week:** 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.

### **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

**Make-up Exam Policy:** Make-up exams will be allowed only in extreme circumstances. 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.

**Grade Grievance Policy:** As per University policy as outlined in the current student catalog.

### Tentative Lecture Schedule

Week 1	Jan 15	Introduction
	Jan 17	Chapter 1
Week 2	Jan 22	Chapter 2/3
	Jan 24	Chapter 4
Week 3	Jan 29	Chapter 5/6
	Jan 31	Chapter 7
Week 4	Feb 5	Chapter 8/9
	Feb 7	Chapter 10
Week 5	Feb 12	Chapter 11/12
	Feb 14	Chapter 13
Week 6	Feb 19	Exam 1
	Feb 21	Chapter 14/15
Week 7	Feb 26	Chapter 16
	Feb 28	Chapter 17/18
Week 8	March 5	Chapter 19
	March 6	Chapter 20/21
Week 9	March 12	Spring Break
	March 14	Spring Break
Week 10	March 19	Chapter 22
	March 21	Chapter 23/24
Week 11	March 26	Exam 2
	March 28	Chapter 25
Week 12	April 2	Chapter 26/27
	April 4	Chapter 28
Week 13	April 9	Chapter 29/30
	April 11	Chapter 31
Week 14	April 16	Chapter 32/33
	April 18	Chapter 34
Week 15	April 23	Chapter 35/36/37
	April 25	Exam 3
Week 16	April 30	Dead Week
	May 2	Dead Week
	Final Exam	May 7 <sup>th</sup> 8-10:30 AM

### Undergraduate student grading

#### Option 1

3 exams 50 points each 150 points

Completion of "Extra credit" 6.25 points/exam 18.75 points

Final grade based on 150 points (168.75 points possible)

#### Option 2

Final exam 75 points

Final grade based on 75 points

**Graduate student grading****Option 1**

3 exams 75 points each 225 points

3 take-home exams 50 points each 150 points

Final grade based on 375 points

**Option 2**

Final exam

75 points

3 take-home exams 50 points each

150 points

Final grade based on 225 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