

Virology
01:146:340
Fall 2021

Class Meeting: Tuesday/Friday 11:00-12:20 pm
Hickman Hall, Room 201
Cook Campus

Instructor: Anne Carr-Schmid, Ph.D.
Office: Nelson Laboratories B112
DLS-Office of Undergraduate Instruction
604 Allison Road
Busch Campus

Office Hours: Wednesdays 12:30-1:30 pm

E-mail: schmid@biology.rutgers.edu

Class Website: Canvas course site

Credits: 3

Required Text: Principles of Virology (2 Volume Set), 5th Edition
Publisher: American Society for Microbiology
Authors: S. Jane Flint, L. W. Enquist, V. R. Racaniello
ISBN: 9781683670322
4th edition is also acceptable

Prerequisites: 01:447:380 or 01:146:270

Course Description and Departmental Learning Goals:

A discussion of the principles of virology that will include an in depth look at the molecular and cellular events that occur during virus replication, the host cell response, and pathogenesis. Emphasis will be placed on animal viruses that impact human health and disease. Strategies for controlling viruses will also be addressed. In addition to mastering factual and conceptual knowledge in virology and the appropriate use of scientific terminology, students will also develop their ability to summarize, integrate, and organize information from this course with other related disciplines, including molecular biology and genetics. Students will also use scientific reasoning to evaluate research and discoveries that not only have improved our understanding of cell biology, but have relevance to human health and to our society.

LECTURE SCHEDULE Fall 2021

Date	Lecture Topic	Readings
<u>Module 1- INTRODUCTION TO VIROLOGY</u>		
9/3 F	Lecture 1 Orientation and Overview -online Dr. Carr-Schmid	Chapter 1
9/7 T	Lecture 2 Infectious Cycle/ Genomes/Survey of Key Viruses Dr. Carr-Schmid	Chapter 2 (pp.27-30) Chapter 3 (pp.62-73)
9/10 F	Lecture 3 Principles of Viral Structure Dr. Jason Kaelber	Chapter 4
9/14 T	Lecture 4 Viral Methodology Dr. Colm Atkins	Chapter 2 (pp.30-56) Chapter 3 (pp.74-87)
9/17 F	Lecture 5 Current Topics/Review	
9/21 T	EXAM I	
<u>Module 2 -VIRUS REPLICATION STRATEGIES</u>		
9/24 F	Lecture 6 RNA Viruses: Genome Replication and mRNA production	Chapter 6
9/28 T	Lecture 7 Attachment Dr. Monica Roth	Chapter 5
10/1 F	Lecture 8 Reverse Transcription and Integration Dr. Monica Roth	Chapter 10
10/5 T	Lecture 9 DNA Viruses: Transcription Strategies	Chapter 7
10/8 F	Lecture 10 DNA Viruses: Genome Replication	Chapter 9
10/12 T	Lecture 11 Processing/Translation	Chapters 8, 11
10/15 F	Lecture 12 Viral Maturation and Assembly	Chapters 12,13
10/19 T	Lecture 13 Viral Evolution Dr. Siobhan Duffy	v. 2 Chapter 10
10/22 F	Lecture 14 Current Topics/Review	
10/26 T	EXAM II	

Module 3- INFECTION, HOST DEFENSE, AND PATHOGENESIS

10/29	F	Lecture 15	Infection/Early Host Response	v.2 Chapters 2, 3
11/ 2	T	Lecture 16	Early Host Response/Adaptive Immunity	v.2 Chapters 3, 4
11/ 5	F	Lecture 17	Adaptive Immunity/ Mechanisms of Pathogenesis	v.2 Chapters 4, 5
11/9	T	Lecture 18	Cellular Transformation and Oncogenesis	v.2 Chapter 6
11/12	F	Lecture 19	Current Topics/Review	
11/16	T	EXAM III		

Module 4- PREVENTION, APPLICATION, AND IMPORTANT HUMAN PATHOGENS

11/19	F	Lecture 20	Vaccines and Antivirals	v.2 Chapters 7,8
11/23	T	Lecture 21	Medical Applications of Viruses	v.2 Chapter 9
11/26	F	No Class	Thanksgiving	
11/30	T	Lecture 22	Zika Virus Dr. Brian Daniels	
12/3	F	Lecture 23	HIV Dr. Arnold Rabson	v.2 Chapter 12
12/7	T	Lecture 24	Current Topics Dr. Brianne Barker – Drew University /TWIV	
12/10	F	Lecture 25	Current Topics & Wrap up!	
12/17	F	EXAM IV	9:00-11:00 AM	

Lectures- Lecture content is an important component of this course. Please feel free to ask questions during lecture or office hours. Lecture slides and any recordings, course overviews, learning objectives, and animations shown in class, will be posted on the canvas course site. In addition to completing the readings, I strongly recommend briefly reviewing the lecture slides before each class. Students are not permitted to upload ANY materials (including slides, lecture overviews, recordings, transcripts of lectures) from this course to the web without Dr. Carr-Schmid's prior authorization.

Examinations: There will be four module examinations. Three will be held during class hours and the fourth will be held during the scheduled final exam period. The examinations will be 1 hours and 20 minutes in length, although students will be given 2 hours for the fourth exam. They will generally include multiple choice, but may also include short answer or short essay format questions. Students are expected to take examinations as scheduled. Students may be excused from taking an exam at the scheduled time due to conflicts arising from religious observances or participation in a sanctioned university activity. Students are required to notify me at least 24 hours in advance of a school or religious conflicts. Students will be excused from taking an exam at the scheduled time due to illness or quarantine, when appropriate. Make-up exams must be rescheduled and completed within a timely manner. Students who miss more than 1 week of class should be in contact with the Dean of Students for assistance. You **must** complete all four module exams to pass the course.

Each exam is to be the result of your individual effort. If upon review of your exam, you feel that a question has been incorrectly graded, please feel free to discuss it with me. You have until the next scheduled exam to discuss the previous one. Your exam will be reviewed; points may be added or subtracted, or there may be no change in the grade. The final exam grid is posted here:

<https://scheduling.rutgers.edu/sites/default/files/pdf/Fall%202021%20NB%20Exam%20Grid%20081621.pdf>

See the full policies at <https://scheduling.rutgers.edu/scheduling/exam-scheduling/final-exam-policies>.

Learning Activities: Students will be expected to complete assigned readings prior to attending lecture. This practice, combined with lecture attendance, will improve comprehension, long term retention, and overall course experience and positive outcome. A variety of individual, paired, or group activities designed to help emphasize key concepts, details, and scientific terminology or promote science communication or provide feedback may be administered throughout the semester as either in class or out of class activities. The *completion* of these various activities will count 5% of your final grade. You must be present in class to receive credit for any in-class activity. Students who are ill or quarantined are excused from completing in class activities during the lecture period and will have the opportunity to make-up in class activities outside of class.

Grading Standards

Exam I	20%
Exam II	25%
Exam III	25%
Exam IV	25%
Learning Activities	<u>5%</u>
	100%

Students must take all 4 exams to pass the class.

Grading Scale

90-100 A

85-89 B+

80-84 B

75-79 C+

70-74 C

65-69 D

Below 65 F

Masking Policy

In order to protect the health and well-being of all members of the University community, masks must be worn by all persons on campus when in the presence of others (within six feet) and in buildings in non-private enclosed settings (e.g., common workspaces, workstations, meeting rooms, classrooms, etc.). Masks must be worn during class meetings; any student not wearing a mask will be asked to leave.

Masks should conform to CDC guidelines and should completely cover the nose and mouth:

<https://www.cdc.gov/coronavirus/2019-ncov/prevent-getting-sick/about-face-coverings.html>

Each day before you arrive on campus or leave your residence hall, you must complete the brief survey on the My Campus Pass symptom checker self-screening app

Self-Reporting Absence Application:

<https://sims.rutgers.edu/ssra/>

If you have to quarantine, or are experiencing symptoms of any transmittable disease, please remain at home and not attend in-person class meetings.

Technology Requirements

Class is held in person. Students must have computer access to the Canvas course site. Please visit the [Rutgers Student Tech Guide](#) page for resources available to all students. If you do not have the appropriate technology for financial reasons, please email Dean of Students deanofstudents@echo.rutgers.edu for assistance. If you are facing other financial hardships, please visit the Office of Financial Aid at <https://financialaid.rutgers.edu/>

Current Academic Integrity Policy:

Summary:

<http://nbacademicintegrity.rutgers.edu/home-2/academic-integrity-policy/>

Resources for Students:

<https://nbprovost.rutgers.edu/academic-integrity-students>

Honor pledge:

The Rutgers honor pledge will be included on all (major) assessments for you to sign: *On my honor, I have neither received nor given any unauthorized assistance on this examination (assignment).*

Rutgers University takes academic dishonesty very seriously.

By enrolling in this course, you assume responsibility for familiarizing yourself with the Academic Integrity Policy and the possible penalties (including suspension and expulsion) for violating the policy. As per the policy, all suspected violations will be reported to the Office of Student Conduct. Academic dishonesty includes (but is not limited to): cheating, plagiarism, aiding others in committing a violation or allowing others to use your work, failure to cite sources correctly, fabrication, using another person's ideas or words without attribution—re-using a previous assignment, unauthorized collaboration, sabotaging another student's work. Students who assist others in cheating will be considered equally culpable under the policy, even if they may not have personally benefitted

If in doubt, please check with Dr. Carr-Schmid. Please review the [Academic Integrity Policy](#).

Student Resources:

To search a range of resources (academic, financial, health, safety) available from Rutgers:

<https://success.rutgers.edu/>

Office of Disability Services: Students with disabilities requesting accommodations must follow the procedures outlines at: <http://ods.rutgers.edu/students/registration-form>. Full disability policies and procedures are at <https://ods.rutgers.edu>

Student-Wellness Services: Access helpful mental health information and resources for yourself or a friend in a mental health crisis on your smartphone or tablet and easily contact CAPS or RUPD. Counseling, ADAP & Psychiatric Services (CAPS) (848) 932-7884 / 17 Senior Street, New Brunswick, NJ 08901/ www.rhscaps.rutgers.edu/ CAPS is a University mental health support service that includes counseling, alcohol and other drug assistance, and psychiatric services staffed by a team of professional within Rutgers Health services to support students' efforts to succeed at Rutgers University. CAPS offers a variety of services that include: individual therapy, group therapy and workshops, crisis intervention, referral to specialists in the community and consultation and collaboration with campus partners.

Violence Prevention & Victim Assistance (VPVA) (848) 932-1181 / 3 Bartlett Street, New Brunswick, NJ 08901 / www.vpva.rutgers.edu/ The Office for Violence Prevention and Victim Assistance provides confidential crisis intervention, counseling and advocacy for victims of sexual and relationship violence and stalking to students, staff and faculty. To reach staff during office hours when the university is open or to reach an advocate after hours, call 848-932-1181. Disability Services (848) 445-6800 / Lucy Stone Hall, Suite A145, Livingston Campus, 54 Joyce Kilmer Avenue, Piscataway, NJ 08854 /

Scarlet Listeners (732) 247-5555 / <http://www.scarletlisteners.com/> Free and confidential peer counseling and referral hotline, providing a comforting and supportive safe space.