

Comparative Virology Course Syllabus

11:126:407 Spring 2026

Meeting times/locations:

Monday/Wednesday 2:00-3:20 PM

Foran Hall 138B, Cook Campus

Instructor information:

Dr. Alanna Cohen

Office: Foran Hall 280

email: alanna.b.cohen@rutgers.edu

office hours: by appointment

TENTATIVE COURSE SCHEDULE (subject to change)

Monday		Wednesday	
		21-Jan	Introduction to Virology
26-Jan	History of Virology	28-Jan	Viral Translation
2-Feb	Viral Genomes and Replication	4-Feb	Composition, structure, and taxonomy
9-Feb	Viral Methods and Techniques	11-Feb	Viral Diagnostics (Dr. Michael Pierce)
16-Feb	Virus ecology, evolution, and transmission 1	18-Feb	EXAM 1
23-Feb	Virus ecology, evolution, and transmission 2	25-Feb	Vector-borne viruses (Dr. Dana Price)
2-Mar	Non-segmented negative-stranded RNA viruses	4-Mar	Segmented negative-stranded RNA viruses
9-Mar	Double-stranded RNA viruses	11-Mar	DNA viruses 1
16-Mar	SPRING BREAK	18-Mar	SPRING BREAK
23-Mar	DNA viruses 2	25-Mar	EXAM 2
30-Mar	Positive-stranded RNA viruses (ONLINE)	1-Apr	Marine Viruses (Dr. Kim Thamtrakoln)
6-Apr	Marine Viral Interactions (Dr. Kay Bidle)	8-Apr	Host immunity and vaccines
13-Apr	Retroviruses 1	15-Apr	Retroviruses 2
20-Apr	EXAM 3	22-Apr	Virus Structural Biology (Dr. Jason Kaelber)
27-Apr	Bacteriophages (Dr. Victoria Sharp)	29-Apr	Leveraging viruses in biotechnology
4-May	Sub-viral particles: prions, viroids, and satellites		

Final Exam: TBD (during final exam period)

Note: This schedule will likely be modified as invited speakers may be added or moved. You will be given sufficient notice of any major changes, which will also be reflected on the Canvas course site.

COURSE DESCRIPTION AND OBJECTIVES

This course is designed to be a comprehensive overview of viruses and their impact on our world. We will cover a wide breadth of different viruses and sub-viral particles including those that cause disease in humans, exhibit effects on agriculture and the environment, and have been used in biotechnological advances. By the end of the semester, students will be familiar with over 20 important viral families and be able to answer the following questions:

- For the different viruses covered, what are the main features of their replication, biology, and pathology?
- What are the attributes of viruses that allow them to facilitate infection in their hosts?
- What are some of the mechanisms by which various host organisms use to protect themselves against virus infection, and how do viruses compromise and hijack these systems?
- What are the major means by which viruses are transmitted?
- How do viruses move and replicate within different host organisms?
- What are some of the major properties of virus structure and composition?
- What are some of the major aspects of virus evolution and adaptation?

GRADING POLICY

A total of 400 points is possible. There are four exams (exams 1-3 and the final exam during exam period). The top three exam scores will be used (lowest is dropped) plus a class project on a topic of the students choosing. Details on the class project can be found on guidelines posted to Canvas.

You may choose to skip an exam for any reason (illness, class conflict, religious observance etc.). Because the lowest exam grade is automatically dropped, no make-up exams will be offered, except in extreme cases such as prolonged illness (which requires documentation and verification from the Dean of Students). Any student who has a high enough point total from their first three exams, plus their project score, to be guaranteed an

“A” in the class will be excused from the final exam. The final exam will be comprehensive, but the majority of it will be from material in the last quarter of the course.

Grading Scale

Letter Grade	Range
A	≥89.5%
B+	85.5 to <89.5%
B	79.5 to <85.5%
C+	75.5 to <79.5%
C	69.5 to <75.5%
D	59.5 to <69.5%
F	<59.5%

Percentage rounding is already built into the grading scale, final grades will not be rounded further.

Required text: No required text. Slides will be posted to Canvas by the start of each class. I use “Understanding Viruses” by Teri Shors (Jones & Bartlett Learning). Some of the following web sites may be useful for students:

U Wisconsin-Madison Institute for Molecular Virology: <https://virology.wisc.edu/>

This Week in Virology (TWIV): <https://www.microbe.tv/twiv/>

International Committee for the Taxonomy of Viruses (ICTV): <https://ictv.global/>

Virus Particle Explorer (VIPER): <https://viperdB.org/>

National Center for Biotechnology Information (NCBI):

<https://www.ncbi.nlm.nih.gov/labs/virus/vssi/#/>

ACCOMMODATIONS FOR STUDENTS WITH DISABILITIES

Rutgers University welcomes students with disabilities into all of the University's educational programs. In order to receive consideration for reasonable accommodations, a student with a disability must contact the appropriate disability services office at the campus where you are officially enrolled, participate in an intake interview, and provide documentation: <https://ods.rutgers.edu/students/documentation-guidelines>. If the documentation supports your request for reasonable accommodations, your campus's disability services office will provide you with a Letter of Accommodation. Please share this letter with your instructors and discuss the accommodations with them as early in your courses as possible.

To begin this process, please complete the Registration form on the ODS web site at: <https://webapps.rutgers.edu/student-ods/forms/registration>. Full policies and procedures can be found at <https://ods.rutgers.edu>.

AVAILABILITY OF TEACHING MATERIALS

Students are responsible for any information presented or discussed during lecture (regardless of if it is the slides). Slide presentations will be posted to course Canvas site prior to each lecture. Lectures will not be recorded. Student recording of lecture is prohibited and must be discussed with the instructor in advance. Please remember that all lecture materials are protected intellectual property and cannot be shared or posted without permission of the instructor.

Rutgers is committed to maintaining minimum digital accessibility standards. Compliance with these standards as part of the Americans with Disabilities Act (ADA) and Section 504 of the Rehabilitation Act is still in process and will be complete by April 24, 2026. If there is an issue with the accessibility of any digital information, please bring it to the attention of your instructor, who will work to rectify the situation.

ACADEMIC INTEGRITY

Academic dishonesty, in any form, will not be tolerated. This includes copying from another student or online resources. You can use online resources to learn from, but need to be able to put all knowledge into your own words and cite the appropriate resources for submission. This includes the use of AI tools such as ChatGPT. Copying ANYTHING directly is strictly prohibited, all writing and material you submit must be your own.

There will be no group work accepted for class presentations and reports unless otherwise stated. Exams are strictly closed book/notebook and students are not allowed to use outside sources or help on exams.

Students must comply with the university's policy on Academic Integrity, which is available at <https://academicintegrity.rutgers.edu/sites/default/files/pdfs/current.pdf>. The principles of academic integrity require that a student:

- properly acknowledge and cite all use of the ideas, results, or words of others.
- properly acknowledge all contributors to a given piece of work.
- make sure that all work submitted as his or her own in a course or other academic activity is produced without the aid of impermissible materials or impermissible collaboration.

- obtain all data or results by ethical means and report them accurately without suppressing any results inconsistent with his or her interpretation or conclusions.
- treat all other students in an ethical manner, respecting their integrity and right to pursue their educational goals without interference. This requires that a student neither facilitate academic dishonesty by others nor obstruct their academic progress.
- uphold the canons of the ethical or professional code of the profession for which he or she is preparing.

Adherence to these principles is necessary in order to ensure that

- everyone is given proper credit for his or her ideas, words, results, and other scholarly accomplishments.
- all student work is fairly evaluated, and no student has an inappropriate advantage over others.
- the academic and ethical development of all students is fostered.
- the reputation of the University for integrity in its teaching, research, and scholarship is maintained and enhanced.

Failure to uphold these principles of academic integrity threatens both the reputation of the University and the value of the degrees awarded to its students. Every member of the University community therefore bears a responsibility for ensuring that the highest standards of academic integrity are upheld.

STATEMENT OF DIVERSITY, EQUITY, AND INCLUSION

It is our intention that students of all backgrounds will be well served by this course. We will work to create an environment of inclusion which respects and affirms the inherent dignity, value, and uniqueness of all individuals, communities and perspectives. We are lucky to have a diverse university. Diverse voices and life experiences enhance the learning process, and we welcome students to share their personal experiences. We will not tolerate disrespectful language or behavior against any individual or group. If you feel as though you have been disrespected or treated unfairly by the instructors or any other individual, please let us know. You may speak with the instructors in person, over email or report anonymously via the Office of Academic Programs. In addition, you may also report bias to the Rutgers Diversity and Inclusion initiative using this link: <http://inclusion.rutgers.edu/report-bias-incident/>.

RELIGIOUS OBSERVANCES

It is university policy (University Regulation on Attendance, Book 2, 2,47B, formerly 60.1 4f) to excuse, without penalty, students who are absent from class because of religious observance and to allow the makeup of work missed because of such absence. Examinations and special required out-of-class activities shall ordinarily not be scheduled on those days when religiously observant students refrain from participating in secular activities. Absences for reasons of religious obligation shall not be counted for purposes of reporting. Students are advised to provide timely notification to instructors about necessary absences for religious observances and are responsible for making up the work or exams according to an agreed-upon schedule.

STUDENT WELLNESS SERVICES

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 professionals 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.

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.

Violence Prevention & Victim Assistance (VPVA)

(848) 932-1181 / 3 Bartlett Street, New Brunswick, NJ 08901 / <https://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.

Compliance and Title IX

Rutgers faculty are committed to helping create a safe learning environment for all students and for the university as a whole. If you have experienced any form of gender or sex-based discrimination or harassment, including sexual assault, sexual harassment, relationship violence, or stalking, know that help and support are available. Rutgers has staff members trained to support survivors in navigating campus life, accessing health and counseling services, providing academic and housing accommodations, and more. The University strongly encourages all students to report any such incidents to the University. Please be aware that all Rutgers employees (other than those designated as confidential resources such as advocates, counselors, clergy and healthcare providers as listed in Appendix A to Policy 60.1.33) are required to report information about such discrimination and harassment to the University. This means that if you tell a faculty member about a situation of sexual harassment or sexual violence, relationship violence, stalking or other related misconduct, the faculty member must share that information with the University's Title IX Coordinator. If you wish to speak to a confidential employee who does not have this reporting responsibility, you can find a list of resources in Appendix A to University Policy 60.1.33. For more information about your options at Rutgers, please visit <https://endsexualviolence.rutgers.edu/>.

Disability Services

(848) 445-6800 / Lucy Stone Hall, Suite A145, Livingston Campus, 54 Joyce Kilmer Avenue, Piscataway, NJ 08854 / <https://ods.rutgers.edu/>

DoSomething button through Rutgers Dean of Students office:

<http://health.rutgers.edu/do-something-to-help/>

Wellness Coaching through Rutgers HOPE:

<https://health.rutgers.edu/health-education-and-promotion/health-promotion-peer-education/wellness-coaching>

Self-Help Apps found on the Rutgers Student Health website:

<https://health.rutgers.edu/health-education-and-promotion/self-help/self-help-apps>

NJ Hopeline - (1-855-654-6735) | **National Suicide Hotline** - (1-800-273-8255)

BASIC NEEDS RESOURCES

Any student who has difficulty affording groceries or accessing sufficient food, or who lacks a safe and stable place to live, is urged to contact the Rutgers Student Food Pantry and/or the Dean of Students (details below). Furthermore, please notify the professor if you are comfortable doing so, as they may be able to provide additional support.

Rutgers Student Food Pantry

848-932-5500 / College Ave Student Center, Room 115 (126 College Ave) /

<http://ruoffcampus.rutgers.edu/food/>

Check their website for hours and additional locations. The Rutgers Student Food Pantry is dedicated to helping all Rutgers students in need of food, no questions asked. Students will be provided with groceries that typically last about one week.

Dean of Students Office

848-932-2300 / 88 College Avenue, New Brunswick, NJ 08901 /

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

Mon-Fri, 8:30am-5:00pm

The Dean of Students Office at Rutgers University-New Brunswick provides solutions, services, and support to help students navigate Rutgers University. The Office serves as a student support network by providing advocacy, problem resolution, and critical incident intervention for those times when additional assistance is needed. Please call to schedule an appointment to meet with a representative from the Dean's office.