

## Comprehensive Virology 5020 (Fall 2019)

Instructor: Dr. Haidong Gu

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Class Time: Tuesdays and Thursdays, 4:00-5:15 pm

Location: 0137 State Hall

Office Hours: By appointment

**Textbook:** Fundamentals of Molecular Virology by Nicholas H. Acheson (2<sup>nd</sup> edition)

**Objective:** The objective of this course is to provide students with a comprehensive knowledge of molecular virology. Students will be instructed in the topics of viral classification, viral molecular structures and their replication cycles. The molecular interactions between viruses and hosts will be emphasized, and their impacts on disease control and global health will be discussed.

**Course Description:** The course will be taught in the lecture format combined with literature discussion.

**Pre-requisite:** The pre-requisite of this class includes Introductory Microbiology 2200, Cell Biology 2600 and Genetics 3070.

### Grading Policy:

**Undergraduate:** Three mid-terms and one final exam, each with 100 points to constitute a total of 400 points. Five random in-class quizzes count for 50 points as extra credits.

The final letter grade will be determined as the following:

Total Percentage	Final Grade
91% - 100%	A
88% - <91%	A-
86% - <88%	B+
80% - <86%	B
78% - <80%	B-
76% - <78%	C+
70% - <76%	C
68% - <70%	C-
66% - <68%	D+
60% - <66%	D
58% - <60%	D-
<58%	F

**Honors section:** In addition to the exams and quizzes, students registered for honors credits will choose a representative virus from a specific viral family, read an assigned review paper, conduct additional literature searches and complete a class presentation about the virus. Students earning 85% (43 points) and above will receive the honors credit. Classroom presentation will be graded as the following:

Material comprehensiveness – 10 points

Slides clarity –10 points

Presentation clarity – 20 points

Responsiveness to questions – 10 points.

If you enroll in the honors section of this course, you will not be allowed to transfer to the non-honors section after two weeks following the start of the semester. If you are unable to complete the work for the honors section during the semester, you will be given the grade of Incomplete in the class. You will have one year to finish the work and change your grade from incomplete to a letter grade. Failure to complete the honors section work in the one year period will result in a change from an incomplete to an F for the course.

**Exam corrections:** When each exam is returned, you will have **ONE WEEK** to correct errors in grading or to challenge the questions on the exam. Corrections and inquiries about specific exam questions must occur in person.

**Important Dates:**

- Last day to drop the class with tuition cancellation – **Wednesday, September 11, 2019.**
- Last day to sign Add forms – **Wednesday, September 11, 2019.**
- Last day to withdraw – **Sunday, November 10, 2019.**
- Final Exam – **Tuesday, December 17, 2019.**

**General Policy:** Anyone caught cheating or plagiarizing will receive a failing grade for the assignment or exam. Cheating or plagiarizing is grounds for failing the class or expulsion from the University, at the discretion of the Professor and Administration.

- 1) Make-up exams will **NOT** be given except under extremely extenuating, documented circumstances. Missed exams will be scored as zero.
- 2) Specific dates and policies regarding withdrawal from the course can be found on the registrar website. The instructor will abide by all dates and rules defined by this office without exception.
- 3) Any special considerations (disabilities, religious holiday conflicts, etc.) must be brought to the attention of the instructor in the first week of classes. They will be accommodated on an individual basis.

- 4) For any and all issues not covered in this syllabus, refer to the ‘Student Due Process Policy’, which can be found on the Dean of Students’ website (<http://www.doso.wayne.edu/judicial/index.htm>).

**Tentative lecture schedule:**

<b>Week</b>	<b>Lecture</b>	<b>Day</b>	<b>Date</b>	<b>Topic</b>
1	1	Th	8/29/19	Why do we study virus and a brief history of virology
2	2	T	9/3/19	Basic concepts of virology and Basic technology in working with viruses
	3	Th	9/5/19	Viral infectious cycle, Structure of viruses, Attachment and entry
3	4	T	9/10/19	Strategies in making mRNA, genome replication, assembly and maturation
	5	Th	9/12/19	Representative families (1) Picornaviruses (+ssRNA)
4	6	T	9/17/19	Representative families (2) Coronaviruses (+ssRNA)
	7	Th	9/19/19	Exam 1
5	8	T	9/24/19	Presentation of paper-
	9	Th	9/26/19	Representative families (3) Flaviviruses and Togaviruses (+ssRNA)
6	10	T	10/1/19	Representative families (4) Orthomyxoviruses (- ssRNA)
	11	Th	10/3/19	Presentation of paper-
7	12	T	10/8/19	Representative families (5) Reoviruses (dsRNA) and Paramyxoviruses (-ssRNA)
	13	Th	10/10/19	Representative families (6) Retroviruses (+ss RNA)
8	14	T	10/15/19	Representative families (8) HIV
	15	Th	10/17/19	Exam 2
9	16	T	10/22/19	Presentation of paper-
	17	Th	10/24/19	Representative families (9) Polyomaviruses and Poxviruses
10	18	T	10/29/19	Representative families (10) Papillomavirus (dsDNA) and Adenoviruses (dsDNA)
	19	Th	10/31/19	Presentation of paper-
11	20	T	11/5/19	Representative families (11) Herpesviruses (dsDNA) (1)
	21	Th	11/7/19	Representative families (12) Herpesviruses (dsDNA) (2)
12	22	T	11/12/19	Presentation of paper-
	23	Th	11/14/19	Exam 3
13	24	T	11/19/19	Viral pathogenesis
	25	Th	11/21/19	Strategy for protection – Host defense and immune responses (1)
14	26	T	11/26/19	Strategy for protection – Host defense and immune responses (2)
	Thanksgiving holiday			
15	27	T	12/3/19	Vaccine – History and current technology, Viral transformation and oncogenesis
	28	Th	12/5/19	Anti-viral drugs, gene therapy, virus evolution and emerging viruses
16		F	12/13/19	Research proposal due
		T	12/17/19	Final Exam (2:45-4:45 pm)