Virology – BIOL 388

Spring 2018, MWF 11:30-12:20, ISC131

Instructor

Dr. Hristina Nedelkovska
Office: ISC 139B
Email: nedelkovska@geneseo.edu Telephone: 245-6396
Office hours: Monday 1:00 – 3:00, Tuesday 9:30 - 10:30, Thursday 2:30 - 3:30, and by appointment.

Course Description

This course will provide an introduction to the field of virology with focus on viral structure, replication and genetics. Major classes of viruses that cause human disease will be discussed. (3 credits)
Prerequisites: BIOL 300

Learning Outcomes

Virology is an upper level elective within the Biology and Biochemistry Majors. It is tailored toward students who have an interest in molecular aspects of biology as well as host pathogen interaction. In addition this class will also train students to critically evaluate primary literature.

Upon completion of this course students will be able to:

1. Understand and explain the fundamental principles of virology including viral nomenclature, structure and assembly as well as viral replication and entry into host cells.

2. Demonstrate knowledge of the most prominent viruses such as Influenza, Hepatitis, Herpesviruses, HIV as well as new emerging viruses such as Zika and Ebola.

3. Understand the interactions between viruses and their hosts and how the immune system rallies again these pathogens.

4. Find, effectively read, interpret and critically evaluate peer reviewed primary scientific literature.

5. Deliver a clear and focused oral presentation geared toward a broad scientific audience.

Textbook

Understanding Viruses, Third Edition Author: Teri Shors

Publisher: Jones & Bartlett Learning (2017) ISBN: 9781284025927

Grading

3 in-class exams, 100 points each	300 points
Final	125 points
Group paper presentation	50 points
Group project	50 points
Class participation/attendance	25 points
	550 points total

The following scale will be used to calculate final grades.

A (93-100%)	A- (90-92%)	
B+ (87-89%)	B (83-86%)	B- (80-82%)
C+ (77-79%)	C (73-76%)	C- (70-72%)
D (60-69%)		
E (<60%)		

Exams: There will be three in class exams and a final exam.
*__Make up exams will only be administered in special circumstances (e.g. qualified medical excuses). Exams cannot be missed for any other reason including weddings, vacations, or travel.__

Group paper presentations: Fridays will be designated for primary literature discussions. Groups of students (2-4 students per group) will select a primary virology paper and present it to the class. The discussion group must be prepared to answer questions and is responsible for keeping the discussion going, however keep in mind EVERYONE in class should be able to discuss every aspect of the paper. The group that's presenting has to select a primary paper no later than Tuesday 5PM and email it to me along with a discussion questionnaire. The group presentations will be graded by your professor, your peers as well as your group: 20 points will come from your professor, 20 points from your peers, and 10 points from self and group evaluation for a total of 50 points.

Group projects: Groups of 2-4 students will investigate a topic in virology (one that is NOT covered in class already) and will present their findings to the class in a clear and focused oral presentation. Each group will have 20 minutes for their presentation and 5 minutes for answering questions. Groups MUST use at least 5 primary literature sources (5 research papers) and at least 1 secondary literature source (1 review paper) for their projects which need to be uploaded to Canvas no later than Tuesday 5PM on the week of the presentation so that we can have an opportunity to look over the primary literature. Group also must make a discussion/summary questionnaire so the class can follow along. Topics can include but are not limited to Dengue viruses, Paramyxoviridae (Mumps and Measels), Poliovirus, Zika, viral vaccines, bioterrorism, phages etc. Once you know which topic you want please email me right away so that I can confirm if this topic is OK and not already claimed by another group (two different groups cannot work on the same topic/virus). The group projects will be graded by your professor, your peers as well as your group: 20 points will come from your professor, 20 points from your peers, and 10 points from self and group evaluation for a total of 50 points.

Class participation/attendance: Class attendance is mandatory, especially during the Friday presentation (those days will count double!). Attendance will be taken daily, and you will be graded both on attendance but even more so on your participation during in class discussions as well as discussion/question during the Friday presentations.

Students with Disabilities: SUNY Geneseo will make reasonable accommodations for persons with documented physical, emotional, or cognitive disabilities. Accommodations will be made for medical conditions related to pregnancy or parenting. Students should contact Dean Buggie-Hunt in the Office of Disability Services (tbuggieh@geneseo.edu or 585-245-5112) and their faculty (Dr. Nedelkovska) to discuss needed accommodations as early as possible in the semester.

Academic Dishonesty & Plagiarism: Students are expected to adhere to the University's policy on academic dishonesty and plagiarism, located in the student handbook. Academic dishonesty and plagiarism have serious consequences, and if you're struggling in class, please ask for help rather than resort to academic dishonesty! Academic dishonesty will result in a zero on the assignment or exam. In addition, a report will be filed to the department chair and Dean of the College, and a record of academic dishonesty will be placed in the student's file at the Dean of Students Office.

Tentative Schedule (subject to change):

Date	Chapters
January 17	1: Introduction to Viruses
January 19	**Workshop: How to properly read and present a scientific primary paper**
January 22	2: Virus Architecture and Nomenclature
January 24	4: Mechanisms of Viral Entry and Spread of Infection in the Body
January 26	**Group paper presentation**
January 29	4: Mechanisms of Viral Entry and Spread of Infection in the Body
January 31	3: Eucaryotic Molecular Biology, Cellular Hurdles, and How Viruses Hijack Host Cells
February 2	**Group paper presentation**
February 5	3: Eucaryotic Molecular Biology, Cellular Hurdles, and How Viruses Hijack Host Cells
February 7	7: Laboratory Diagnosis of Viral Diseases and Working with Viruses in the Research Laboratory
February 9	**Group paper presentation**
February 12	**Exam 1: Chapters 1, 2, 3, 4, and paper presentations**
February 14	7: Laboratory Diagnosis of Viral Diseases and Working with Viruses in the Research Laboratory
February 16	**Group paper presentation**
February 19	9: Influenza Viruses
February 21	9: Influenza Viruses
February 23	**Group paper presentation**
February 26	10: Hepatitis Viruses

February 28	10: Hepatitis Viruses
March 2	**Group paper presentation**
March 5	**Exam 2: Chapters 7, 9, 10, and paper presentations**
March 7	11: Herpesviruses
March 9	**Group paper presentation**
March 12 - 16	**SPRING BREAK**
March 19	11: Herpesviruses
March 21	12: Human Immunodeficiency Virus (HIV)
March 23	**Group paper presentation**
March 26	12: Human Immunodeficiency Virus (HIV)
March 28	14: Poxviruses
March 30	**Group paper presentation**
April 2	14: Poxviruses
April 4	16: Viruses and Cancer
April 6	**Group project presentations (Presentation 1 and 2)**
April 9	**Exam 3: Chapters 11, 12, 14, and paper/project presentations**
April 11	16: Viruses and Cancer
April 13	**Group project presentations (Presentation 3 and 4)**
April 16	16: Viruses and Cancer
April 18	5. Host Resistance to Viral Infections
April 20	**Group project presentations (Presentation 5 and 6)**
April 23	15. New and Reemerging Viruses
April 25	15. New and Reemerging Viruses
April 27	**Group project presentations (Presentation 7 and 8)**
April 30	Course wrap up
MAY 3 **FINAL 12-2:30**	**Exam 4: Chapters 5, 15, 16 and group projects** **Also expect a cumulative portion**