

Virology MCB 4503-B51A
Florida International University
Summer 2017

Course Time: Mo/Wed/Fri 12:00 PM – 2:15 PM
Course Location: Glen Hubert Library 170
Instructor: Helena Schmidtmayerova, Ph.D.
Office: AC I 383A
Office hours: Mo/Wed/Fri 10:30 AM-11:30 AM
Mo/Wed 4:45 PM- 6:00 PM (or by the appointment)
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COURSE DESCRIPTION:

The Virology MCB 4503 is designed to facilitate your understanding of the world of viruses. Special emphasis will be given to viruses infecting humans, although we will discuss viruses that infect other organisms. We will primarily focus on the molecular mechanisms of virus replication, the interactions between viruses and the cells in which they replicate, and on the virus-host interactions and their relevance to the viral pathogenesis underlying specific disease processes. We will also explore the mechanisms of host defenses against viruses and the role of innate and adaptive immune responses to viral infection. You will further learn about the major classes of viruses, their replication cycle and its impact on the host by using one or two well-studied viruses as the examples.

The prerequisite for the course is passing grade (C or higher) from Organic Chemistry CHM 2210 and Genetics PCB 3063.

The course is web-assisted, lecture notes (power point slides), your grades, assigned readings will be posted on Blackboard. You will also have an opportunity to initiate discussion on class related topics within the blackboard platform.

COURSE OBJECTIVES:

After completing this course, you will be able to:

1. Identify basic properties of the viruses, recognize unique features of their structure, and explain how they enter and replicate in host cells.
2. Define the role of virus-host interactions as they relate to viral pathogenesis underlying disease processes
3. Explain defense mechanisms against viral infections employed by the hosts
4. Recognize the role of innate and adaptive immune responses to viral infection
5. Explain the molecular mechanisms underlying the replication cycles of major classes of viruses

LEARNING MATERIAL:

Nicholas H. Acheson, “Fundamentals of Molecular Virology”, 2nd edition, John Wiley & Sons, Inc. ISBN: 978-0-470-90059-8. The textbook is your basic reference book. However, there will be additional required readings as well. Course will be web-assisted via Blackboard and assigned readings will be posted on blackboard periodically throughout the semester. It is your responsibility to check Blackboard regularly for assignments. **You will need iClickers for in class activity.**

CLASS ATTENDANCE AND PARTICIPATION

- There are less classes in summer than in regular spring and fall semester with no final week. Therefore, **be prepare to attend longer classes and study intensively throughout whole summer semester. Your class attendance is important and will help you to master the material.**
- In the case of missed lecture days or impending absences, you are responsible for obtaining lecture notes and in-class announcement, information from fellow classmates.
- Electronic communication equipment (i.e. phones, computers, ipads): Please leave them at home or keep them in your bag. I want to see your faces and I want you to be an active participant of the class engaged in discussions.

HOW WILL YOU SUCCEED IN THIS COURSE?

Prepare and Participate: Be active in the classroom. Active class participation is very important and even though you might feel nervous to raise your hand and speak, please do so; ask questions, answer questions, trigger discussions, share what you have been reading. Any course material relevant question is appropriate, so do not hesitate to ask. Remember that having an inquisitive mind is vital for science and learning. You will discover that being active in the class will help you to learn. However, in order to be active in the class you have to come prepared. If you want to succeed in the class you have to do your work, complete your readings before coming to the class. Identify challenging concepts and material and prepare relevant questions for the class. Remember that: "**The will to succeed is important, but what's more important is the will to prepare (Bobby Knight)**". This applies not only to sport, but to your studies as well.

Communicate: Don't try to solve all class challenges by yourself. Talk.....Talk to your peers, talk to me. Come to my office and share your concerns, request further clarifications of the material, share your thoughts. Let me know if any of the material or class activity is challenging for you and you struggle with it. We will try to find solution together. Don't wait until the end of semester to do so; come early and come as many time as you need. If you can't come during my office hours, please take an appointment. It is important that you start doing this early in the semester in order to overcome obstacles and succeed.

ASSESSMENT:

Your grade will be assessed based on your performance in **three tests (the third one will be cumulative), and class activities.**

♦ <u>Grade Distribution:</u>	Test 1 – 250 points
	Test 2 – 250 points
	Test 3 – 300 points
	Class activity– 200 points
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	Total: 1000 points = 100%

♦ **Tests** will consist of multiple-choice, true-false questions answered on computer-graded forms (Scantron), fill-in, matching and essay questions. The third test is cumulative and will contain questions from all material covered over the semester.

Make-up tests: You will be able to make-up for one missed exam. All make-up exams will have an essay format.

There will be **no make-up for the third cumulative exam** unless circumstance beyond the

student's control arises and are accompanied by the appropriate documentation:

Death of an immediate family member requires official bereavement statement/ Student-immediate family member with acute-terminal illness require an official hospital/clinic notification/ Traffic accident requires official accident report/ Jury duty requires county clerk summons/ Military duty.

All make-up exams will have an essay format.

♦ **Class activity** will consist of iClicker questions and short class assignments that will NOT be posted online. Class activity will NOT be announced in advance and you will NOT be able to make-up for them; no exception will be granted. You will accumulate points over the semester and the highest-class points achieved will equal 100% (200 points). If you miss the class activity you can make up for missed points by extra credit.

• **Extra Credit:** You will have an option to earn extra credit by preparing short 5-8 minutes power point presentation of an article selected from peer-reviewed journal. The article topic should be relevant to the course material, has to be recent (no older than 4 years), and approved. Article presentation will follow the class topic schedule. You can select any topic from scheduled course material. You can earn up to 50 points (5%) extra credit added to your final grades.

♦ **Grading scale:**

A	93 % - 100%
A-	90 % - 92.9 %
B+	88 % - 89.9 %
B	83 % - 87.9 %
B-	80 % - 82.9 %
C+	78 % - 79.9 %
C	70 % - 77.9 %
D	60 % - 69.9 %
F	<60%

♦ **Exam Dates:** **Test 1 – Friday, May 19**
 Test 2 – Monday, June 5
 Test 3 – Friday, June 16

IMPORTANT NOTE: Please remember that your grades are earned, not given. I will not answer emails or personal requests asking for better grades than earned in class. Your grades will be based on your achievements and class activity.

ACADEMIC MISCONDUCT POLICY:

Florida International University is a community dedicated to generating and imparting knowledge through excellent teaching and research, the rigorous and respectful exchange of ideas, and community service. All students should respect the right of others to have an equitable opportunity to learn and honestly demonstrate the quality of their learning. Therefore, all students are expected to adhere to a standard of academic conduct, which demonstrates respect for themselves, their fellow students, and the educational mission of the University. All students are deemed by the University to understand that if they are found responsible for academic misconduct (e.g. *cheating, plagiarism, academic dishonesty*), they will be subject to the Academic Misconduct procedures and sanctions, as outlined in the *FIU Student Handbook* under the “Academic Misconduct” section.”

If found cheating (the unauthorized use of books, notes, aids, electronic sources, or assistance from another person with respect to examinations, course assignments, or the unauthorized possession of examination papers or course materials, whether originally authorized or not) **you will receive an “F”, no exception.**

TENTATIVE ASSIGNMENT SCHEDULE:

(Please be advised that the course syllabus schedule of events is subject to change)

Week	Subject	Assign chapters to read
1st week May 8 - 14	<u>INTRODUCTION TO VIROLOGY</u> Introduction Viral structure and assembly Viral classification and evolution Viral entry and replication Cellular defense against viral infection Immune response to viral infection	1 2 3 4 33 34
2nd week May 15 - 21	<u>POSITIVE-STRAND RNA VIRUSES</u> Picornaviruses Flaviviruses Togaviruses Coronaviruses Test 1: Friday, May 19	11 12 13 14
3rd week: May 22 - 28	<u>NEGATIVE STRAND AND DOUBLE-STRANDED RNA VIRUSES</u> Paramyxoviruses and Rhabdoviruses Filoviruses Bunyaviruses Influenza Viruses Reoviruses – Double-stranded RNA viruses	15 16 17 18 19
4th week: May 29 – June 4 <small>(May 29 – Memorial Day, FIU is closed)</small>	<u>SMALL AND LARGE DNA VIRUSES</u> Parvoviruses Polyomaviruses Papillomaviruses Adenoviruses Herpesviruses Poxviruses	20 21 22 23 24 26
5th week: June 5 - 11	Test 2: Monday, June 5 <u>VIRUSES THAT USE A REVERSE TRANSCRIPTASE</u> Retroviruses Human Immunodeficiency Virus Hepadnaviruses	28 29 30
6th week: June 12 - 18	Review of Virology Test 3: Friday, June 16	