

**University of Florida**  
**College of Public Health & Health Professions Syllabus**  
**PHC 6937: Public Health Virology (3 credits)**

Fall: 2019

Delivery Format: On Campus, In-class, Lecture, Tues. (1-hour) & Thurs. (2-hours)

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Instructor Name: John A. Lednicky, PhD  
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Phone Number: 352-273-9204  
Email Address: jlednicky@phhp.ufl.edu  
Office Hours: M 11:00 am – 12:00 pm

Preferred Course Communications: The “Inbox” in Canvas will be used for all email correspondence. Instructor will not be responsible for emails sent to “UFL” email address.

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**Prerequisites** Two semesters of Biology, preferable molecularly oriented courses. An introductory course in Microbiology is highly recommended.

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## **PURPOSE AND OUTCOME**

**Course Overview** Virology is the study of viruses. Students will learn the basics of animal virology: what is a virus, and about virus genomes and structure, the infectious cycle, different types of infections, transformation, vaccines, and gain knowledge of many of the viruses of public health importance worldwide.

### **Relation to Program Outcomes**

Competencies primarily gained in this course:

1. Describe to specific communities or general populations the hazards posed by human viruses, how virus infections are acquired, and methods used to prevent their spread.
2. Develop testable hypotheses and models to evaluate contagion and prevention methods, such as vaccination.
3. Communicate effectively with constituencies in oral and written forms on matters related to virology

### **Course Objectives and/or Goals**

At the end of this course the student will possess introductory understanding of:

- Contemporary viruses of public health importance
- Methods used for diagnosing virus infections
- Human virus taxonomy
- Diseases caused by human and zoonotic viruses
- How virus reproduction can lead to disease

### **Instructional Methods**

1. Lectures: Students are responsible for all the material presented in the course and assigned readings. This will be the main source of content in this course.
2. Readings and Resources. In addition to the required text, supplementary readings and resources will be posted in the course. The reading list may be supplemented during the course.
3. Assessments: The primary assessments will be class participation and three exams.

**What is expected of you?**

You are expected to actively engage in the course throughout the semester. You must come to class prepared by completing all out-of-class assignments. This preparation gives you the knowledge or practice needed to engage in higher levels of learning during the live class sessions. If you are not prepared for the face-to-face sessions, you may struggle to keep pace with the activities occurring in the live sessions, and it is unlikely that you will reach the higher learning goals of the course. Similarly, you are expected to actively participate in the live class. Your participation fosters a rich course experience for you and your peers that facilitates overall mastery of the course objectives.

## DESCRIPTION OF COURSE CONTENT

**Topical Outline/Course Schedule**

Class No.	Date(s)	Topic(s)	Readings
1	Aug. 20	What is a virus?	Flint Vol 1 Chp 1
2	Aug. 22	No class; students familiarize themselves with what constitutes a 'virome'	Web-based articles
3	Aug. 27	Virus infections, transmission, and the infectious cycle; virus genomes and the Baltimore Classification Scheme	Flint Vol 1 Chp 2 and 3
4	Aug. 29	Virus particle structure and determination thereof	Flint Vol 1 Chp 4
5	Sept. 3	Attachment and entry of virus particles into cells	Flint Vol 1 Chp 5
6	Sept. 5	RNA directed RNA synthesis by RNA viruses	Flint Vol 1 Chp 6
7	Sept. 10	Transcription and RNA processing	Flint Vol 1 Chp 8 through p227 and Chp 10 through p364
8	Sept. 12	Virus DNA replication schemes	Flint Vol 1 Chp 9
9	Sept. 17	Retroviruses, reverse transcription, and integration	Flint Vol 1 Chp 7
10	Sept. 19	Exam 1	
11	Sept. 24	Assembly of virus particles	Flint Vol 1 Chp 12 and 13
12	Sept. 26	The infected cell	Flint Vol 1 Chp 14
13	Oct. 1	Virus infections: general principles	Flint Vol 2 Chp 1 and 2
14	Oct. 3	Intrinsic and innate host defenses against viruses	Flint Vol 2 Chp 3
15	Oct. 8	Host adaptive immunity	Flint Vol 2 Chp 4
16	Oct. 10	Mechanisms of virus pathogenicity	Flint Vol 2 Chp 5
17	Oct. 15	Acute virus infections	Flint Vol 2 Chp 5
18	Oct. 17	Persistent virus infections	Flint Vol 2 Chp 5
19	Oct. 22	Viruses and cancer (oncogenic viruses)	Flint Vol 2 Chp 6
20	Oct. 24	Exam 2	
21	Oct.29	Vaccines	Flint Vol 2 Chp 8
22	Oct. 31	Antivirals	Flint Vol 2 Chp 9
23	Nov. 5	Virus evolution	Flint Vol 2 Chp 10
24	Nov. 7	Emerging and re-emerging viruses	Flint Vol 2 Chp 11
25	Nov. 12	HIV, AIDS, HTLV and Human endogenous retroviruses – Part 1	Flint Vol 2 Chp 6
26	Nov. 14	HIV, AIDS, HTLV and Human endogenous retroviruses – Part 2	Flint Vol 2 Chp 6
27	Nov. 19	Thanksgiving holiday (no class)	
28	Nov. 21	Gene therapy using virus vectors	
29	Nov. 26	Prions	
30	Dec. 3	Current topics	
31	Dec. 5	Reading Day	
32	Dec. 10	<b>Final Examination</b>	
	Dec. 17	<b>Grades Due</b>	

## Course Materials and Technology

Recommended textbooks: Principles of Virology. Vol I: Molecular Biology, Vol. II: Pathogenesis and Control (S.J. Flint et al., Third Edition, ASM Press 2015).

For technical support for this class, please contact the UF Help Desk at:

- [Learning-support@ufl.edu](mailto:Learning-support@ufl.edu)
- (352) 392-HELP - select option 2
- <https://lss.at.ufl.edu/help.shtml>

## ACADEMIC REQUIREMENTS AND GRADING

**Assignments** Supplementary assigned reading materials will be posted in Canvas.

### Grading

Students will be graded on a standard letter scale of A to F. Students will be evaluated by their class participation (10%) and 3 regular examination scores (30% each). Students who fully participate and attend every session will earn at least a B for the class participation portion of the overall grade. To earn an A in class participation, students must attend each session and demonstrate that they prepared for lectures beforehand (through reading assigned text, interacting with the lecturers, and actively participating in group exercises).

### Exams

There will be three in-class exams. The format for these exams is CLOSED BOOK. The exams will test your knowledge of the material covered in lectures and assigned readings.

### Class Participation

Class participation is important for several reasons, foremost of which is that the level of participation is a gauge of subject matter comprehension. Moreover, this is a graduate-level class where students are encouraged to actively think through problems, offer solutions, and it is important to hear view points from colleagues with different academic backgrounds and life-experiences. Class participation will be considered appropriate when for each lecture, each student provides at least one commentary or leads a discussion relevant to the subject matter. The instructor will maintain a tally (yes/no) and moderate the discussion so each student is given ample opportunity to participate in each lecture.

Requirement	Due date	Points or % of final grade
Class participation	On-going evaluation	10%
Exam I	See course schedule	30%
Exam II	See course schedule	30%
Exam III	See course schedule	30%

Point system used (i.e., how do course points translate into letter grades).

### Example:

<b>Points earned</b>	<b>93-100</b>	<b>90-92</b>	<b>87-89</b>	<b>83-86</b>	<b>80-82</b>	<b>77-79</b>	<b>73-76</b>	<b>70-72</b>	<b>67-69</b>	<b>63-66</b>	<b>60-62</b>	<b>Below 60</b>
<b>Letter Grade</b>	A	A-	B+	B	B-	C+	C	C-	D+	D	D-	E

Please be aware that a C- is not an acceptable grade for graduate students. The GPA for graduate students must be 3.0 in all 5000 level courses and above to graduate. A grade of C counts toward a graduate degree only if a sufficient number of credits in courses numbered 5000 or higher have been earned with a B+ or higher.

Letter Grade	A	A-	B+	B	B-	C+	C	C-	D+	D	D-	E	WF	I	NG	S-U
Grade Points	4.0	3.67	3.33	3.0	2.67	2.33	2.0	1.67	1.33	1.0	0.67	0.0	0.0	0.0	0.0	0.0

More information on UF grading policy may be found at:

<http://gradcatalog.ufl.edu/content.php?catoid=10&navoid=2020#grades>

## Exam Policy

### Policy Related to Make up Exams or Other Work

I expect you to attend and be prepared to participate in all class sessions. Personal issues with respect to class attendance or fulfillment of course requirements will be handled on an individual basis.

Please note: Any requests for make-ups due to technical issues MUST be accompanied by the UF Computing help desk (<http://helpdesk.ufl.edu/>) correspondence. You MUST e-mail me within 24 hours of the technical difficulty if you wish to request a make-up.

### Policy Related to Required Class Attendance

Attendance is mandatory.

Please note all faculty are bound by the UF policy for excused absences.

Excused absences must be consistent with university policies in the Graduate Catalog (<http://gradcatalog.ufl.edu/content.php?catoid=10&navoid=2020#attendance>) and require appropriate documentation. Additional information can be found here: <https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx>

## STUDENT EXPECTATIONS, ROLES, AND OPPORTUNITIES FOR INPUT

### Expectations Regarding Course Behavior

Students are expected to arrive in class ready to learn before the class begins. The use of cell phones, pagers or laptop computers (except for class assignments) is not permitted in class!

### Communication Guidelines

You are required to contact the professor by email using the "Inbox" in Canvas for clarification and assistance with the course material and the assignments, and for special issues that may arise. Weekday daytime (US Eastern Time) emails have the best chances of being answered quickly. Please only use the Canvas "Inbox" to communicate with the course instructor and/or TA. While the instructors and TAs will check their UFL email regularly, they will not be held responsible for email sent directly to their UFL addresses.

### Academic Integrity

Students are expected to act in accordance with the University of Florida policy on academic integrity. As a student at the University of Florida, you have committed yourself to uphold the Honor Code, which includes the following pledge:

**“We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honesty and integrity.”**

You are expected to exhibit behavior consistent with this commitment to the UF academic community, and on all work submitted for credit at the University of Florida, the following pledge is either required or implied:

**“On my honor, I have neither given nor received unauthorized aid in doing this assignment.”**

It is your individual responsibility to know and comply with all university policies and procedures regarding academic integrity and the Student Honor Code. Violations of the Honor Code at the University of Florida will not be tolerated. Violations will be reported to the Dean of Students Office for consideration of disciplinary action. For additional information regarding Academic Integrity, please see Student Conduct and Honor Code or the Graduate Student Website for additional details:

<https://www.dso.ufl.edu/sccr/process/student-conduct-honor-code/>  
<http://gradschool.ufl.edu/students/introduction.html>

Please remember cheating, lying, misrepresentation, or plagiarism in any form is unacceptable and inexcusable behavior.

### **Online Faculty Course Evaluation Process**

Students are expected to provide feedback on the quality of instruction in this course by completing online evaluations at <https://evaluations.ufl.edu>. Evaluations are typically open during the last two or three weeks of the semester, but students will be given specific times when they are open. Summary results of these assessments are available to students at <https://evaluations.ufl.edu/results/>.

### **Policy Related to Guests Attending Class:**

Only registered students are permitted to attend class. However, we recognize that students who are caretakers may face occasional unexpected challenges creating attendance barriers. Therefore, by exception, a department chair or his or her designee (e.g., instructors) may grant a student permission to bring a guest(s) for a total of two class sessions per semester. This is two sessions total across all courses. No further extensions will be granted. Please note that guests are **not** permitted to attend either cadaver or wet labs. Students are responsible for course material regardless of attendance. For additional information, please review the Classroom Guests of Students policy in its entirety. Link to full policy: <http://facstaff.php.ufl.edu/services/resourceguide/getstarted.htm>

## **SUPPORT SERVICES**

### **Accommodations for Students with Disabilities**

If you require classroom accommodation because of a disability, it is strongly recommended you register with the Dean of Students Office <http://www.dso.ufl.edu> within the first week of class or as soon as you believe you might be eligible for accommodations. The Dean of Students Office will provide documentation of accommodations to you, which you must then give to me as the instructor of the course to receive accommodations. Please do this as soon as possible after you receive the letter. Students with disabilities should follow this procedure as early as possible in the semester. The College is committed to providing reasonable accommodations to assist students in their coursework.

### **Counseling and Student Health**

Students sometimes experience stress from academic expectations and/or personal and interpersonal issues that may interfere with their academic performance. If you find yourself facing issues that have the potential to or are already negatively affecting your coursework, you are encouraged to talk with an instructor and/or seek help through University resources available to you.

- The Counseling and Wellness Center 352-392-1575 offers a variety of support services such as psychological assessment and intervention and assistance for math and test anxiety. Visit their web site for more information: <http://www.counseling.ufl.edu>. On line and in person assistance is available.

- You Matter We Care website: <http://www.umatter.ufl.edu/>. If you are feeling overwhelmed or stressed, you can reach out for help through the You Matter We Care website, which is staffed by Dean of Students and Counseling Center personnel.
- The Student Health Care Center at Shands is a satellite clinic of the main Student Health Care Center located on Fletcher Drive on campus. Student Health at Shands offers a variety of clinical services. The clinic is located on the second floor of the Dental Tower in the Health Science Center. For more information, contact the clinic at 392-0627 or check out the web site at: <https://shcc.ufl.edu/>
- Crisis intervention is always available 24/7 from:  
Alachua County Crisis Center:  
(352) 264-6789  
<http://www.alachuacounty.us/DEPTS/CSS/CRISISCENTER/Pages/CrisisCenter.aspx>

Do not wait until you reach a crisis to come in and talk with us. We have helped many students through stressful situations impacting their academic performance. You are not alone so do not be afraid to ask for assistance.

### **Inclusive Learning Environment**

Public health and health professions are based on the belief in human dignity and on respect for the individual. As we share our personal beliefs inside or outside of the classroom, it is always with the understanding that we value and respect diversity of background, experience, and opinion, where every individual feels valued. We believe in, and promote, openness and tolerance of differences in ethnicity and culture, and we respect differing personal, spiritual, religious and political values. We further believe that celebrating such diversity enriches the quality of the educational experiences we provide our students and enhances our own personal and professional relationships. We embrace The University of Florida's Non-Discrimination Policy, which reads, "The University shall actively promote equal opportunity policies and practices conforming to laws against discrimination. The University is committed to non-discrimination with respect to race, creed, color, religion, age, disability, sex, sexual orientation, gender identity and expression, marital status, national origin, political opinions or affiliations, genetic information and veteran status as protected under the Vietnam Era Veterans' Readjustment Assistance Act." If you have questions or concerns about your rights and responsibilities for inclusive learning environment, please see your instructor or refer to the Office of Multicultural & Diversity Affairs website: [www.multicultural.ufl.edu](http://www.multicultural.ufl.edu)

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