

Course Syllabus:

Readings in Viral Ecology (BIOL 8801)
Spring 2013

Professor: Dr. Joshua Weitz

Contact information:

Dr. Joshua Weitz
Office: Cherry Emerson 219
Phone: 404-385-6169
Email: jweitz@gatech.edu
Web: <http://ecotheory.biology.gatech.edu>
Office hours: by appointment

Class: Friday, 10:05-10:55 AM in Cherry Emerson 204

Textbooks:

Required textbook: None; course is based on recent papers in the field.

Recommend text: All students are encouraged to buy and read Carl Zimmer's [A Planet of Viruses](#) before the 2nd class.

Journal articles: All articles to be posted on <http://tsquare.gatech.edu>

Course Objective: We will address recent advances in the empirical, experimental and theoretical investigation of the role of viruses in natural environments, spanning environmental to human systems. We will focus primarily on the viruses of microbes – such viruses are highly abundant and highly diverse and yet their functional roles remain poorly understood. Interactive discussion of papers will shed light on common principles and processes relevant to understanding viral ecology.

Prerequisites: Graduate status or permission from instructor.

Course format:

Course will meet for 1 hr per week and will be composed of lectures by the instructor (~10%), seminars (~30%), and discussion (~60%). The subject of each class will center on one, at most two, papers on environmental viruses and the interaction of viruses and hosts in the environment.

Students taking this course will give presentations on recent papers in the field. The instructor will provide background material associated with each week's topic and will provide information on expectations for presentations.

The reading assigned for each week should be done *prior* to class.

Grading Scheme:

50% presentations

- Each student presentation will be evaluated by the instructor and by all students in the class. The instructor grade will represent 2/3 of the presentation grade and the averaged peer evaluations will represent 1/3 of the presentation grade.

40% in-class participation in discussions

10% online participation in discussions – using Tsquare

Attendance: Regular attendance in class is expected. Exceptions will be accepted for valid, documented reasons only, including: (1) official representation of the Institute; and (2) medical emergencies.

Academic Integrity: Students are reminded of the obligations and expectations associated with the Georgia Tech Academic Honor Code and Student Code of Conduct, available online at:

http://www.deanofstudents.gatech.edu/integrity/policies/honor_code.php

<http://www.deanofstudents.gatech.edu/codeofconduct>.

Any violations must be reported to directly to the Dean of Students.

Additional Resources:

- Tsquare — <http://tsquare.gatech.edu>
- Tech Tutoring — <http://www.undergradstudies.gatech.edu/supportTutoring.htm>

Updates: This syllabus is subject to modification. Any changes will be announced in class and posted on the course website.

Week	Theme	Topic	Class format
Jan 11	Introduction	Intro to Viral Ecology	Lecture (Weitz)
Jan 18	Who is there?	A Global View	Discussion
Jan 25	..	Counting viruses	Discussion
Feb 1	..	Viral diversity	Presentation
Feb 8	What are viruses doing to their hosts?	Viral life history traits	Presentation
Feb 15	..	Intracellular dynamics	Presentation
Feb 22		Viruses of viruses	Discussion
Mar 1	What are the system-level consequences	Cross-infection: new experimental methods	Presentation
Mar 8	..	Microbial community structure	Presentation
Mar 15	..	Biogeochemical cycles	Presentation
Mar 22	<i>No class</i>	<i>No class</i>	<i>Spring break</i>
Mar 29	Viral theory	Cross-infection networks	Discussion
Apr 5	..	Population dynamics	Discussion
Apr 12	..	Evolutionary dynamics	Discussion
Apr 19	Cross-systems perspectives	Viruses of humans vs. viruses in humans	Discussion
Apr 26	..	The future of viral ecology	Presentation