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**Biology Department, College of Arts & Sciences, Valdosta State University**

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**FALL 2014---COURSE SYLLABUS\***

**BIOL 4510 Virology (CRN 81782) -- 3 credit hours**

**BIOL 6510 Virology (CRN 81808) – 3 credit hours**

**Class: MW 3:30-4:45 pm, 2022 Bailey Science Center**

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**Instructor: Dr. Jenifer Turco**

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**Office: 2091 Bailey Science Center**

**Office Hours: Wed., 5:00-5:30 pm & Thurs. 12:30-1:30 pm; or by appointment.**

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**Course Description:**

**BIOL 4510 Virology 3-0-3 (3 credit hours) Prerequisites: BIOL 1107, BIOL 1108, BIOL 3100. or consent of instructor.**

**BIOL 6510 Virology 3-0-3 (3 credit hours) Prerequisite: Admission into the graduate program or permission of the instructor.**

An introduction to viruses and other non-cellular infectious agents. Topics include the structure and composition of these agents, their replication, effects on their host, and host responses. Methods for studying these agents, their origins and evolution, and their uses in biotechnology will also be discussed.

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**Required Textbook: UNDERSTANDING VIRUSES, Second Edition**

By Teri Shors

Jones & Bartlett Learning 2013

**ISBN 978-1-4496-4892-3**

**Additional Resource: BASIC VIROLOGY, Third Edition**

by Edward K. Wagner, Martinez J. Hewlett, David C. Bloom, and David Camerini

Blackwell Publishing 2008

**ISBN 978-1-4051-4715-6**

The instructor will place a copy of this book on reserve in the library. You may need to consult it periodically.

**Other Materials:**

Calculator that is not integrated with a cell phone

One CD (or jump drive) for oral presentation

One thin, light-weight folder for handing in assignments (No 3-ring binders, please)

Paper clips or stapler/staples for organizing references and assignments

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**SPECIAL NOTES TO STUDENTS:**

1. In order to respect the privacy of each student, exam scores and grades will not be posted, given out by telephone, or sent to students by email.
  2. Students should consult the VSU Student Handbook, Undergraduate Catalog, Semester Calendar, Schedule of Classes, & Registration Guide (all available online) for information about VSU policies and procedures regarding registration, conduct, drop/add, and withdrawal. October 2 is midterm. Students are not permitted to withdraw after October 9 except in cases of hardship.
  3. Students requesting classroom accommodations or modifications because of a documented disability should discuss this need with the instructor at the beginning of the semester. These students must contact the Access Office for Students with Disabilities. The phone numbers are 245-2498 (V/VP) and 219-1348 (TTY).
  4. Cell phones, music players (iPod, mp3, etc.), and other electronic devices may not be used at any time in class or lab. Students are especially cautioned to be certain that cell phones are silenced and put away during examinations. Should a cell phone ring during an exam, or should a cell phone be seen by the instructor during an examination, the student's exam will be terminated and the student will receive a score of "0" on the exam. (continued on p. 2)
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**\*This is a tentative syllabus. Changes to this syllabus will be announced during class periods; alternatively, changes may be posted on BlazeView. Graduate students who are taking BIOL 6510 must meet with the instructor to discuss additional course requirements & grading.**

## SPECIAL NOTES TO STUDENTS (continued):

5. Please use the rest room before you come to class to take an exam. Should a student need to leave the classroom during an exam, the student's exam will be terminated.
6. Students are expected to read and adhere to the following: (i) the VSU Student Code of Conduct as described in the VSU Student Handbook and (ii) the Biology Department policy on plagiarism (available online through the departmental Web site). The instructor may use a variety of methods for detecting cheating and plagiarism. Cheating or plagiarism will result in a grade of "0" for the exam or assignment. In addition, the instructor may complete a Report of Academic Dishonesty and submit it to the VSU Student Conduct Office. A student who cheats or plagiarizes on more than one exam or assignment will receive a grade of "F" in the course.
7. No disruptive behavior will be tolerated during class. A student who engages in disruptive behavior will be asked to leave. If necessary, the campus police will be contacted.
8. Students who wish to use laptop computers as part of the class are required to sit in the first three rows of the classroom.

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## COURSE OBJECTIVES

After successful completion of this course, the student should be able to:

- (1) Describe the biochemical composition, replication strategies, functions, and significance of viruses and other non-cellular infectious agents.
- (2) Read and understand current scientific literature related to viruses and other non-cellular infectious agents.
- (3) Convey orally and in writing information from the scientific literature related to viruses and other non-cellular infectious agents.

### Alignment of Assignments with Course Objectives:

The course objective(s) aligned with each assignment are given on the last page of this syllabus.

### Alignment of Course Objectives with Educational Outcomes:

The **Student Learning Goals for the Core Curriculum in the University System of Georgia (USG)** are available online at [http://www.usg.edu/academic\\_affairs\\_handbook/section2/C738/](http://www.usg.edu/academic_affairs_handbook/section2/C738/). The application of these learning goals in VSU's Core Curriculum is explained at <http://www.valdosta.edu/academics/academic-affairs/vp-office/vsu-core-curriculum.php>.

Each Core Area (A1, A2, B, C, D, and E) has one or more learning goals. There are also three additional learning goals for the Core Curriculum as follows: Learning Goal I: US Perspectives (US Goal): Students will demonstrate an understanding of the United States and its cultural, economic, political, and social development; Learning Goal II: Global Perspectives (GL Goal): Students will demonstrate an understanding of the cultural, religious, or social dimensions of societies around the world; and Learning Goal III: Critical Thinking (CT Goal): Students will identify, evaluate, and apply appropriate models, concepts, or principles to issues, and they will produce viable solutions or make relevant inferences. The **VSU General Education Outcomes** (numbered 1-8) are available online at

<http://ww2.valdosta.edu/gec/documents/matrixGenEdoutcomestocorecourses.pdf> ;

in this syllabus they are referred to as VSU1-VSU8. The **Biology Undergraduate Educational Outcomes** (numbered 1-5) are available in the VSU Undergraduate Catalog, and the **Biology Graduate Educational Outcomes** are available in the VSU Graduate Catalog and are numbered 1 through 4. Both catalogs are available online at <http://www.valdosta.edu/academics/catalog/>.

### Alignment of Course Objectives with Educational Outcomes:

Course objective (1) relates to USG Core Curriculum Learning Goals for Core Area D; Learning Goal III: Critical Thinking; VSU General Education Outcomes 3, 4, 5, and 7; Biology Undergraduate Educational Outcomes 2, 3, 4, and 5; and Biology Graduate Educational Outcome 1.

Course objectives (2) & (3) relate to USG Core Curriculum Learning Goals for Core Area D; Learning Goal III: Critical Thinking; VSU General Education Outcomes 3, 4, 5, and 7; Biology Undergraduate Educational Outcomes 1-4; and Biology Graduate Educational Outcomes 1 and 2.

## TENTATIVE CLASS SCHEDULE

<b>Date</b>	<b>Topics</b>	<b>Related material in text</b>
Mon. Aug. 18	General course information Introduction to viruses Impact of viruses	Chapters 1
Wed. Aug. 20	Molecular biology & host cell constraints	Chapter 2
Mon. Aug. 25	Virus architecture and nomenclature Virus replication cycles	Chapters 3 & 4
Wed. Aug. 27	Virus replication cycles	Chapter 4
Mon. Sept. 1	Labor Day (holiday)	
Wed. Sept. 3	Laboratory diagnosis of viral diseases & working with viruses in the research laboratory <b>***Primary source for oral presentation is due.***</b>	Chapter 5
Mon. Sept. 8	Laboratory diagnosis of viral diseases & working with viruses in the research laboratory	Chapter 5
Wed. Sept. 10	Working with viruses in the research laboratory	To be announced
Mon. Sept. 15	Mechanisms of viral entry & spread of infection in the body	Chapter 6
Wed. Sept. 17	EXAM 1 (material covered through Sept. 15)	
Mon. Sept. 22	Mechanisms of viral entry & spread of infection in the body	Chapter 6
<b><u>Wed. Sept. 24</u></b>	Host resistance to viral infections <b>Student oral presentations (attendance required)</b>	Chapter 7
<b><u>Mon. Sept. 29</u></b>	Host resistance to viral infections <b>Student oral presentations (attendance required)</b>	Chapter 7
Wed. Oct. 1	Host resistance to viral infections <b>***Written report is due.***</b>	Chapter 7
<b><u>Mon. Oct. 6</u></b>	Epidemiology <b>Student oral presentations (attendance required)</b>	Chapter 8
<b><u>Wed. Oct. 8</u></b>	History of medicine, clinical trials, gene therapy, & xenotransplantation <b>Student oral presentations (attendance required)</b>	Chapter 9

## TENTATIVE CLASS SCHEDULE

<b>Date</b>	<b>Topics</b>	<b>Related material in text</b>
<b><u>Mon. Oct. 13</u></b>	Viruses and cancer <b>Student oral presentations (attendance required)</b>	Chapter 10
<b><u>Wed. Oct. 15</u></b>	Viruses and cancer <b>Student oral presentations (attendance required)</b>	Chapter 10
Mon. Oct. 20	Poliovirus and other enteroviruses	Chapter 11
Wed. Oct. 22	EXAM 2 (material covered through Oct. 20)	
Mon. Oct. 27	Influenza viruses	Chapter 12
<b><u>Wed. Oct. 29</u></b>	Influenza viruses <b>Student oral presentations (attendance required)</b>	Chapter 12
<b><u>Mon. Nov. 3</u></b>	Rabies <b>Student oral presentations (attendance required)</b>	Chapter 13
<b><u>Wed. Nov. 5</u></b>	Poxviruses <b>Student oral presentations (attendance required)</b>	Chapter 14
<b><u>Mon. Nov. 10</u></b>	Poxviruses Herpesviruses <b>Student oral presentations (attendance required)</b>	Chapters 14 & 15
<b><u>Wed. Nov. 12</u></b>	Herpesviruses <b>Student oral presentations (attendance required)</b>	Chapters 15
Mon. Nov. 17	Human immunodeficiency virus	Chapter 16
Wed. Nov. 19	Hepatitis viruses <b><u>Assigned reading: New viruses &amp; viruses that are reemerging, Chapter 18</u></b>	Chapter 17
THANKSGIVING HOLIDAY		
Mon. Dec. 1	Hepatitis viruses Prions & viroids	Chapters 17 & 18
Wed. Dec. 3	Bacteriophages	Chapter 21
Mon. Dec. 8	Bacteriophages	Chapter 21
<b>Fri. Dec. 12</b>	<b>Comprehensive Final Exam 5-7 pm</b>	

**ATTENDANCE.** Attendance will be checked in class. As stated in the VSU Undergraduate Catalog, “A student who misses more than 20% of the scheduled classes of a course will be subject to receiving a failing grade in the course.” Students are required to attend and participate during class periods when student oral reports are scheduled. Missing or not participating in more than two of these required classes will result in the loss of points as follows: fifty points will be deducted for each absence beyond the second absence.

**EXAMINATIONS.** Examinations may include questions of the multiple-choice, matching, true-false, short answer, problem, and essay formats. Three exams will be given (two exams plus the final exam). The second exam will be comprehensive in that up to 25% of the points on the exam may include material covered before the first exam. The final exam will be fully comprehensive. Exams 1 and 2 will be worth 225 points each, and the final exam will be worth 250 points. A student should notify the instructor as soon as possible if he/she misses an exam. Arrangements for a make-up exam must be made within one week after the exam date; otherwise, a make-up exam will not be given. A makeup exam will be worth 190 points rather than 225 points, and it may consist entirely of questions of the short answer and essay formats. Cell phones may not be used during examinations or at any time in class.

**WRITTEN REPORTS.** Each student must select and read one article (approximately 4 to 10 pages per article) about viruses (published between 2010 and 2014) and submit a **complete** copy of the article plus a 3-page, typed, **double-spaced** report summarizing it. These articles may include informal articles from *Science* or other scientific publications, articles from *Scientific American*, short review articles from *Science* or *Emerging Infectious Diseases*, articles from *Morbidity and Mortality Weekly Report*, formal articles from other scientific journals, etc. For the written reports, margins must be set at 1 inch on all sides of the paper, and a 12-point font should be used. A title page that has the topic, the student’s name, and the date, should also be included. Each report will be worth 100 points. Plagiarized reports will receive a score of 0.

**ORAL REPORTS.** Each student is required to give an oral presentation during class. It will be about 15 minutes long, and will focus on a particular virus, viral outbreak, or other virus-related topic. Topics will be chosen from a list provided by the instructor, and a lottery will be used to determine the order in which students will select their topics. **Please note that the topics for a given student’s written and oral reports must not be closely related.** Students should use the textbook as a starting source of information; in addition, they must use at least one additional, formal scientific article to prepare the presentation. This article must be a peer-reviewed, primary source, and it must have references inserted in the text and listed at the end. A complete copy of this article must be submitted to the instructor for approval by the date indicated in the course syllabus. During the presentation, the student must show and explain at least two graphs, tables, or illustrations from the primary source. Use of PowerPoint software is required for the presentation. Immediately after the presentation, each student must give the instructor a folder that contains a printed copy of the PowerPoint presentation, a copy of any notes used during the presentation, and a printed copy of the primary source.

Students are expected to attend ALL student presentations. Material related to these presentations may be included on the examinations. **There will be no makeups for the oral presentations, except in the case of a documented, serious emergency.**

**SPECIAL NOTE.** Students who recently took BIOL 3100 Microbiology may not select a virology article or topic that is closely related to an article or topic that they researched during the microbiology course.

**LATE ASSIGNMENTS.** Students are expected to submit assignments on time. Substantial penalties will be applied to late assignments. For example, a written report that is more than one week late will receive a score of zero. The maximum score on a written report that is between two and seven days late will be 50 points.

**Grading scale:**  $\geq 900$ , A; 800-899, B; 700-799, C; 600-699, D;  $\leq 599$ , F

Points:	Exam 1	225 points
	Exam 2	225 points
	Final Exam	250 points
	Written report (course objectives 2 & 3)	100 points
	Oral report (course objectives 2 & 3)	200 points
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	Total	1000 points