

**Valdosta State University**  
**BIOL 4900 Senior Seminar**  
**Section C; CRN # 21333**  
**Spring 2015**

**Class Meeting times:** Wednesday 12:00 – 1:50 pm, 1202 Bailey Science Center  
Thursday 4:00 - 4:50 pm, Powell Hall Auditorium

**Instructor:** Dr. Eric W. Chambers  
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**Office hours:**

**Course Objective:** (From the VSU Undergraduate catalog): The capstone course in biology. Students are required to attend outside lectures chosen by the instructor. This course assesses students' ability to research independently topics in biology, assimilate the information, and disseminate the information in an organized and understandable fashion in both written and oral forms. Besides demonstrating comprehension of their topic and competence in communication skills, students take the ETS Major Field test in biology and complete the departmental Senior Exit Questionnaire for successful course completion.

**Course Requirements:** This course is graded on a "Satisfactory" or "Unsatisfactory" basis. In order to receive a "Satisfactory" grade and pass the course you must complete the following assignments.

- Earn a minimum score of 140 on the Major Fields Test
- Attend 80% of scheduled class meetings and seminars.
- Complete the Senior Exit Questionnaire
- Obtain at least 70% of points from the following assignments and projects
  - Review paper (100 points)
  - Oral Presentation (75 points)
  - List of Works Cited (25 points)
  - Science Seminar attendance and Summaries (25 points)

All assignments are due at the start of class on the assigned date (assignments can be completed early). Assignments submitted later in class or later that day will incur a 50% reduction in the maximum number of points possible. Assignments can be completed early; however no assignments will be accepted 24 hours after the due date.

Assignments not turned in will receive 0 points. Rubrics for all assignments and projects will be provided on the course Blazevie website.

**Major Field Test:** The ETS Major Field Test is a comprehensive, standardized test designed to evaluate the student's general knowledge in the sub-disciplines of biology. The test scores will be used to evaluate the effectiveness of the department's curriculum, and VSU's scores will be compared to the national average to identify possible weak areas in our curriculum. Students should take the test seriously and make every effort to excel on it. Completion of the ETS Major Field Test with a score of 140 or

higher is a course requirement, and students who fail to complete the ETS Major Field Test will receive a grade of unsatisfactory for the course.

Each individual student is responsible for contacting the VSU Testing Office (Powell Hall-West, First Floor, Room 1120; Telephone 229-245-3878) and arranging a time to take the ETS Major Field Test in Biology. Students must schedule the Major Field Test by February 25, 2015. A fee is assessed to take the Major Field Test. The Biology Department will pay the fee for each student to take the test once. Students who fail to score at least 140 on the test must re-take it until a score of 140 is achieved. The student will bear the cost for any re-taking of the Major Field Test.

**Review paper:** Senior seminar this semester will revolve around the biology of emerging diseases. Many of these issues are ongoing and unresolved. Your review should examine the issue objectively and come to a conclusion based on the evidence presented. Your review paper must meet the following criteria:

1. It must be in review format (like a term paper) and should not have methods, results or discussion sections since this is not your work.
2. It must be thorough and complete, double-spaced, 12 point font between 12-15 pages (excluding figures, table and works cited page). Any paper less than 2000 words will be deemed unsatisfactory.
3. The Literature Cited section (see below) must include AT LEAST 12 references (more is better) appropriately cited in the body of the manuscript; at least 8 of these references must be scientific articles from peer-reviewed journals.
4. Literature Cited: All sources of information used in the paper should be cited. In the body of the paper citations should follow either of the following formats:
  - Johnson (1995) found that *Bufo valiceps* eggs were tolerant to 3 ppt NaCl for up to eight days.
  - *Bufo valiceps* eggs were tolerant to 3 ppt NaCl for up to eight days (Johnson 1995).
  - References in the literature cited section should be listed in the same format as in the journal "**Emerging Infectious Diseases.**"

Additional information, including a grading rubric, will be provided to you through Blazeview.

**Oral Presentation:** You will make a 20-25 minute oral presentation on your research paper topic. You will need to be prepared to answer questions and comments from other students and the instructor. Further details and the rubric used for grading the presentation will be provided to you at a later date on Blazeview.

**Science Seminar Summaries:** : As part of BIOL 4900 you will attend the science seminar series. The seminar schedule is posted and updated online at: <http://www.valdosta.edu/colleges/arts-sciences/science-seminars/2015-spring/>. It is your responsibility to follow the schedule and attend the weekly seminar. Be advised that the schedule is regularly updated with seminars and/or cancellations. Students must check in with their professor following each seminar to receive credit for attendance.

You are required to complete a summary of seminars (5 points each) hosted by the biology department. You can earn up to 25 points, which may take as few as 5 seminar summaries (Biology is hosting 7 seminars in Spring 2013). A rubric for seminar summaries is posted on the course Blazeview website. Summaries are due by 5pm the Friday immediately following the seminar. Seminar summaries should be in Microsoft Word format (.doc or .docx) and uploaded through TurnItIn on Blazeview.

**Academic Honesty Policy:** Cheating, plagiarism (submitting another person's material as one's own, or doing work for another person which will receive academic credit) are all impermissible. This includes the use of unauthorized books, notebooks, or other sources in order to secure or give help during an assignment or exam, the unauthorized copying of examinations, assignments, reports, or term papers, or the presentation of unacknowledged material as if it were your own work. Students are responsible for knowing, understanding and complying with the VSU Student Code of Conduct, in Appendix A of the Student Handbook (<http://www.valdosta.edu/stulife/handbook/>)

If substantial evidence exists for a violation of this policy, ***the student(s) involved will receive a grade of 'U' for the course*** and an official record will be filed following the Academic Integrity Response along with a letter to the Dean of Students (<http://www.valdosta.edu/academic/AcademicHonestyPoliciesandProcedures.shtml>).

Students are required to read and sign the Department of Biology's Plagiarism Policy. <http://ww2.valdosta.edu/biology/documents/PlagiarismPloicy.pdf>

In addition, students must complete the plagiarism tutorial **by Jan 21** online at <http://www.lib.usm.edu/legacy/plag/plagiarismtutorial.php>

**TurnItIn:** By taking this course, you agree that all required course work may be subject to submission for textual similarity review to Turnitin, a tool within BlazeVIEW. For more information on the use of Turnitin at VSU see [Turnitin for Students](#).

**Participation/Assignments:** You are expected to participate in class discussions and be engaged during student presentations. This portion of your grade will reflect your engagement during presentations (asking questions, completion of peer evaluation forms, etc.) and discussions.

**Access Office:** Students requesting classroom accommodations or modifications due to a documented disability must contact the Access Office for Students with Disabilities located in the Farber Hall. The phone numbers are 245-2498 (V/VP) and 219-1348 (TTY).

**Federal Privacy Act:** It is illegal to release personal information about an individual to others. Therefore grades, averages, and other personal information about any person will not be released to another person or over email.

**Student Success Center:** The Student Success Center (SSC) at Valdosta State University is located in Langdale Residence Hall above the Tech Shop and is available to all students. The SSC provides free peer tutoring in core curriculum courses, including biology, chemistry, math, writing, and foreign languages. The SSC also provides free professional academic advising and on-campus job information in one location. Call 333-7570 to make an appointment, or visit the website: [www.valdosta.edu/ssc](http://www.valdosta.edu/ssc).

## PROPOSED SCHEDULE

**Seminars:** Students are required to attend the Science Seminar Series, Thurs. 4-4:50 pm. The schedule of speakers can be found online:  
<http://www.valdosta.edu/cas/scisem/Fall2012.shtml>

Date	Topic	Assignments Due
14-Jan	Course Logistics and Overview	
21-Jan	Effective Scientific Writing	Plagiarism Tutorial Final Topic Selection
28-Jan	Student Research, No Class	
4-Feb	Library/Research Orientation	
11-Feb	Student Research, No Class	
18-Feb	Effective Scientific Presentations	Submit list of 12 references
25-Feb	Student Research, No Class	Major Fields Test
4-Mar	Paper Submission/Senior Exit Questionnaire	Research Paper
11-Mar	Student Presentations	
18-Mar	Student Presentations	
25-Mar	Spring Break	
1-Apr	Student Presentations	
8-Apr	Student Presentations	
15-Apr	Student Presentations	
22-Apr	Student Presentations	
29-Apr	Student Presentations	

**Research Topics:**

1. Development of novel drugs to treat TB
2. Climate change and the emergence of novel viruses
3. Urbanization and arbovirus emergence
4. Why the recent emergence of Chikungunya virus?
5. Natural antivirals and the treatment of dengue virus
6. Host seeking behavior in *Triatoma infestans*
7. Development of novel methods to protect human blood supply from *Leishmania* spp.
8. Human impacts leading to bat virus spillover
9. The impact of Ebola virus on endangered non-human primates
10. Do population control strategies drive transmission of disease in wildlife populations?
11. Could climate change lead to the emergence of monkeypox in human populations?
12. Recent advances in vaccine development against Chagas Disease
13. The evolution and spread of MERS coronavirus
14. Are chemical control methods for malaria control doomed to fail?
15. How dangerous is the emergence of Artemisinin resistant strains of *Plasmodium* spp.
16. Is the emergence of a 5<sup>th</sup> human malaria, *Plasmodium knowlesi*, a cause for concern?
17. *Aedes aegypti* control: Wolbachia-based methods vs. genetically modified mosquitoes

18. Are emerging diseases contributing to the global decline in bumblebees (*Bombus spp.*)?
19. What were the major factors leading to the emergence of Pepino Mosaic Virus?
20. What factors promote the emergence of pathogenic avian influenza strains?
21. Using deep-sequencing to understand the microbial habitats of coral.
22. Using paleovirology to better understand Ebola virus
23. Understanding the pathogenesis of West Nile encephalitis.
24. What is the reservoir of severe acute respiratory syndrome coronavirus (SARS-CoV)
25. Differences and similarities between two unique henipaviruses: Nipah virus and Hendra virus
26. The genetic and/or environmental factors promoting transmission of Chikungunya virus by the mosquito *Aedes albopictus*.
27. The effects of aerosol exposure to Ebola virus
28. Host environment and gene expression within *Borrelia burgdorferi*, the causative agent of Lyme Disease.
29. Evolution of mosquito preference for humans
30. Using Measles as a model to understand variation in immune response to vaccines.