

BIOL 4900
Credit Hours 0-3-1

SENIOR SEMINAR
Department of Biology

Instructor: Dr. Timothy J. Fort

Phone: (229) 249-2643

Office Hours: Tuesday 2.00 – 4.00 pm or by appointment

Office: BC 1100

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Senior Seminar: Thursday 2.00 pm – 3.50 pm BC 1024

Science Seminar Series: Thursday 4.00 pm – 4.50 pm TBA

Course Description 4900:

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 completion of the course.

Pre- or Co-requisites:

Completion of all required courses in the senior curriculum for the biology major. Grade: Satisfactory (S) or Unsatisfactory (U)

Educational Outcomes:

This course supports the Department of Biology Educational Outcome # 1, and the Valdosta State University General Educational Outcomes #'s 4 & 7.

Specific Course Requirements:

- 1) Research paper
- 2) Oral Presentation
- 3) Successful completion of ETS Major Field Test in Biology (140 or higher)
- 4) Attendance of all scheduled class meetings
- 5) Attendance and evaluation of six science seminars
- 6) Completion of Biology Senior Exit Questionnaire

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. Successful Completion of the ETS Major Field Test is a course requirement. Students who fail to complete the ETS Major Field Test will receive a grade of unsatisfactory for the course. Each student is responsible for contacting the VSU Testing Office (Powell Hall-East, first floor, room 1131 Telephone 229-245-3878) to arrange a time to take the ETS Major Field Test in Biology. 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. **Students must complete the Major Field Test by 30th September 2011.** For more information on the Biology Major Field Test please refer to the ETS website.
(<http://www.ets.org/mft/about/content/biology>)

Science Seminar Series:

Students are required to attend six (6) seminars in the Science Seminar Series. The Fall 2011 Science Seminar schedule with times, dates and venues can be found on the VSU website (<http://www.valdosta.edu/cas/scisem/Fall2011.shtml>). Students are required to complete an evaluation form for each science seminar attended. An evaluation form template will be emailed to all students at the beginning of the semester which should then be printed out in advance of each seminar by the student. In order to receive credit for attending a science seminar, it is the student's responsibility to see the instructor immediately after each seminar and submit her/his signed, completed evaluation form. No late and/or electronically submitted evaluation forms will be accepted.

Attendance and Conduct: Attendance of scheduled classes, six science seminars and all student presentations is required of all students. Students are expected to arrive on time and should not enter class or a science seminar late. Use of cell phones during classes and seminars is not permitted. Cell phones must be turned off prior to the beginning of a class or seminar. **If you use your cell phone, or your cell phone activates, during a student oral presentation or formal science seminar you will automatically receive an unsatisfactory grade for the course.**

Plagiarism: (Dr. R. Carter: BIOL 4900 Syllabus, Spring 2009)

Recognition of and respect for the ownership of property is one of the distinguishing features of civilization. Ideas come from individuals and are effectively owned by their originators; thus, ideas are intellectual property. In the academic sphere, we frequently deal with the ideas of others, most often in published form. As with tangible property, intellectual property is subject to ownership and protection. Moreover, publication establishes ownership of intellectual property. It is essential that we respect the ideas and writing of others and that we scrupulously cite all sources of any and all ideas that are not our own.

Random House Webster's College Dictionary (2000) defines **plagiarism** as "the unauthorized use of the language and thoughts of another author and the representation of them as one's own." There are many forms of plagiarism. Perhaps the most blatant form is copying from some other source without citing that source. Other types of plagiarism include using a paper written by another and the improper citation of references. When paraphrasing, the author of the paraphrased material must be properly cited, and, when words are taken directly from another source, their author must be properly cited and the quotation must be placed within quotation marks for short quotations or in a separate paragraph with special indentation for longer quoted passages. Plagiarism is theft of intellectual property, and the simplest way to avoid plagiarism is to give credit where credit is due!

It is imperative that the term paper be the student's own original work. Plagiarism will not be tolerated, and any student caught plagiarizing shall receive a failing grade on the term paper and a grade of unsatisfactory in the course. **Please be forewarned that various web search engines will be used to check for plagiarism.** Each student will be required to read the VSU Biology Department's Plagiarism Policy and to sign a form to be kept on file with the department, indicating they have read and comprehend this policy. By taking this course, you agree that all required course work may be subject to submission for textual similarity review to SafeAssign, a tool within BlazeVIEW.

(<http://www.valdosta.edu/academic/SafeAssignforStudents.shtml>)

For your guidance, the following is a list of websites dealing with issues of plagiarism.

<http://www.unc.edu/depts/wcweb/handouts/plagiarism.html>

<http://www.indiana.edu/~wts/pamphlets/plagiarism.shtml>

<http://www.northwestern.edu/provost/students/integrity/plagiarism.html>

<http://www.plagiarism.org/>

Students with Documented Disabilities:

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).

Privacy Act:

Due to the Buckley Amendment, or Privacy Act, an individual's personal information cannot be released to anyone but that individual. As such, grades will not be discussed over the phone, by email, or released to a friend or relative.

Grading:

Discussion/Participation:	10 points	Final Grade:	
Oral Presentation:	40 points	Satisfactory (S)	≥ 70 points
Written Paper:	50 points	Unsatisfactory (U)	< 70 points

Deductions to grade:

Plagiarism in research paper	→ automatic zero for paper
Absence from a scheduled class	-10 points
Each absence from science seminar	-10 points
Failure to successfully complete ETS Major Field Test	-40 points
Failure to complete the senior exit questionnaire	-40 points
Failure/late submission of outline of research paper	-20 points

Outline of Research Paper:

You are required to submit a detailed outline of your research paper, by 3pm 30th September. Your outline should include a potential title for your paper and provide a tentative outline of the general sections and subheadings within the paper with detailed notes. A bibliography of correctly formatted references should be included. Photocopies of the abstracts from primary research articles to be used should be included.

Research Paper:

All students are required to write a research paper on their selected topic. The research paper must be submitted to the instructor in two formats (paper and electronic) by 5pm 31st October. The "paper" version of the research paper, along with copies of all cited primary research articles, must be submitted to the instructor in an organized 3 ring binder. The "electronic" version of the research paper must be submitted to the instructor via email as an attachment in either Microsoft Word or Rich Text Format. Late submission of either the "paper" version or the "electronic" version of the research paper will result in an unsatisfactory grade for the course.

Overall Format of Research Paper:

The format of your research paper should be sub-headed for ease of reading and should include:

1) Title Page:

Title of the paper, student name, course title, instructor name and submission date.

2) Abstract:

Abstracts should be on a separate page and be a maximum of 250 words in length.

3) Main body of the research paper consisting of:

- i) Introduction:** An opening to the paper that provides the reader with a general introduction to the research topic.
- ii) Discussion:** A detailed discussion of specific scientific studies on the selected topic with references cited where appropriate. Subheadings for different sections within the discussion may also be included as appropriate
- iii) Conclusion:** A concluding section to the body of the paper that summarizes the student's interpretation of the information in the paper.

4) Literature Cited:

The literature cited must contain at least 10 primary research articles. Students may also cite no more than 3 review articles and no more than one textbook. No web based references will be accepted unless from an online peer-reviewed journal. All references used must be cited at least once in the body of the paper using the proper format. For this course we will adhere to the format specified in the instructions to authors for the journal of neurophysiology published by the American physiological society. (<http://www.the-aps.org/publications/authorinfo/elements.htm>)

5) Figures: All included figures must be numbered and have an accompanying legend

Specific Formatting of Research Paper:

- 1) 12 point Times New Roman font
- 2) Double spaced
- 3) Left-justified
- 4) 1 inch margins
- 5) Page Numbering:
 - Title and Abstract pages are not to be numbered.
 - Number all pages for the body, literature cited and figures (lower right corner)
- 6) Paper Length:
 - Paper must be a minimum of 10 pages in length.
 - Title/Abstract/Literature Cited/Figures do not count towards paper length.

Oral presentation:

All students are required to give an oral presentation of their research topic. Oral presentations will be scheduled for the last few weeks of the semester with each student being assigned a specific date and time for their presentation. After research topics have been picked, an oral presentation schedule will be generated and emailed to all students. Each presentation will be scheduled to last for a total of 30 minutes. For the first 20 minutes, the student will give a formal presentation of their topic using PowerPoint. The final 10 minutes of the allotted time is reserved for questions and class discussion. It is the responsibility of the student to ensure that their PowerPoint presentation can be properly shown using the computer and projection system available in the assigned classroom. Immediately upon completion of their presentation, each student must submit a copy of their PowerPoint presentation on a CD to the instructor.

Checklist of Course Requirements:

- ___ Completion of the Major Field Test in Biology with a score of 140 or above
- ___ Completion of Senior Exit Questionnaire
- ___ Outline with references for term paper (Due by 3.00pm 30th September)
- ___ Oral presentation
- ___ CD of Oral Presentation PowerPoint (Due immediately after presentation)
- ___ Term paper (Due by 5pm 31st October)
- ___ Electronic copy of Research Paper (Due by 5pm 31st October)
- ___ Attendance of all regularly scheduled class meetings including all student seminar presentations
- ___ Attendance of and submission of completed evaluation forms for *at least six (6)* seminars in the Science Seminar Series

TOPIC SELECTION ORDER:

COURSE THEME: The neural basis of behavior

TOPICS: Research topics are to be chosen from the following list. Each topic may be chosen by only one student and must be approved by the instructor.

- 1) Echolocation in bats
- 2) Prey location in barn owls
- 3) Prey capture (feature recognition) in toads
- 4) Mate calling in crickets – Song production in males
- 5) Mate calling in crickets – Song recognition in females
- 6) Flight in locusts
- 7) Escape behavior in crawfish
- 8) Associative learning in honeybees
- 9) Learning and memory in *Aplysia* (simple reflex systems)
- 10) Learning and memory in *Drosophila* (CREB proteins)
- 11) Spatial navigation in rats
- 12) Swimming in the medicinal leech
- 13) Swimming in Lampreys
- 14) Leg movements in locusts
- 15) Escape behavior in cockroaches
- 16) Mauthner neurons and the teleost fast start
- 17) Jamming avoidance in weakly electric fish
- 18) Digestion in crustaceans (lobster/crab)
- 19) Swimming in sea slugs – *Tritonia*
- 20) Ultrasound avoidance in noctuid moths
- 21) Feeding in *Aplysia*
- 22) Birdsong – Song production: Song production pathway
- 23) Birdsong – Song learning: Anterior forebrain pathway