

**BIOL 4900: Senior Seminar (Section A)
Fall 2019**

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Office Hours: Monday 3:00-4:00 and Thursday 9-10:00 or by appointment (BC 1032)

Note: this is a tentative syllabus. The instructor may make changes as needed and more detailed information or clarification may be given in class.

Course Theme: *Physiological Adaptations of Animals*

Course Description (from the 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.

This is the capstone course for your undergraduate biology degree; therefore, this course is designed for you to 'prove' that you are ready to become a professional biologist. During this semester you will (1) attend and evaluate scientific presentations; (2) develop a review paper on a topic in biology, and (3) present your findings to your classmates. You must also take the Major Field test to demonstrate your knowledge of biology content and complete an exit questionnaire. Educational outcomes associated with this course include numbers 1-5 as specified by the VSU Biology Department (<http://catalog.valdosta.edu/undergraduate/academic-programs/sciences-mathematics/biology>). The VSU General Education Outcomes can be found at <https://www.valdosta.edu/academics/academic-affairs/vsu-core-curriculum.php> and this course meets Educational Outcomes A1 and D .

Pre- or Corequisite: Completion of all required courses in the senior curriculum for the biology major

Graded: Satisfactory or Unsatisfactory

Class Time: Tuesday 12:45-1:30pm (BC 1023) and Tuesday 5:00-6:50pm (BC 1025). On days when there is no seminar I will try to use this time for additional office hours if I have no other meetings scheduled.

Course Requirements: In order to earn a 'Satisfactory', you will need to complete all of the following:

- A minimum score of 140 on the Major Fields Test
- Attend scheduled class meetings and seminars
- Complete the Senior Exit Questionnaire
- Write a review paper and make a presentation

To receive a 'Satisfactory' (S), you must earn 70 points or more based on the following:

- o Annotated Bibliography 0-5 pts
- o Outline 0-10 pts
- o Rough Draft 0-10 pts
- o Final Paper 0-30 pts
- o Oral Presentation 0-35 pts
- o Discussion/Participation 0-10 pts

How to Lose Points

- o Absence from a scheduled Class or Seminar -5 pts
- o Arriving late to a scheduled Seminar -2 pts
- o Failure to complete the MFT -40 pts

- Complete senior exit questionnaire on October 1 -30 pts
- Late submission of assignments
 - Bibliography -5 pts
 - Outline -10 pts
 - Paper -20 pts

WRITTEN REVIEW PAPER: I developed a list of topics and put together a packet of papers. You will have the first week of class to look through these topics and choose the topic that is most interesting to you. On August 27, the class will draw numbers and choose topics. If you want to choose a different topic you can, but it cannot be a topic that you have previously written about for another class and it must be on a physiological adaptation of an animal.

The paper must be a minimum of 10 pages (no longer than 15 pages). It must be double-spaced pages with 12-point font and 1 inch margins. The length excludes title page, abstract, bibliography, and figures.

You will write the review paper using a scaffold writing process. Your paper will be broken down into smaller parts: 1) References, 2) paper outline, 3) rough draft with peer review, 4) final paper.

Plagiarism

Each student is responsible for reading, understanding, and following the Biology Department's Plagiarism Policy. Each student will be required to read this policy, print and sign the form (<https://www.valdosta.edu/biology/documents/resources/PlagiarismPolicy.pdf>) by September 27. In addition, students must complete the online plagiarism tutorial (<https://www.indiana.edu/~academy/firstPrinciples/tutorials/>). A copy of the completed certificate should be emailed to the instructor by September 27.

Plagiarized final papers will earn an Unsatisfactory (U). I reserve the right to use any plagiarism software to identify plagiarism.

Number of References

Minimum of 8 references. At least five of these must be scientific research articles (primary research) from peer-reviewed journals; the other three can be peer-reviewed review articles. Webpages, textbooks, newspaper articles, popular articles, interviews, etc. do not count in the eight references. Any sources used should be published after 2005. If you find sources published prior to this, you must get permission from me to use them if you want to have them count towards the five primary research articles.

If you need help finding papers, come see me. I will ask you how you looked for papers, so be prepared to explain your search process.

Sections of the Paper

- **Title Page** that includes title of the paper, student name, course title, instructor name and submission date (when you turn it in)
- **Abstract** that is on a separate page and no more than 200 words in length.
- **Body** of the paper consisting of an Introduction and the remainder of the body that is divided into relevant sections.
- **Figures** can be inserted into the body of the text. They must be referred to in the text and underneath the figure have a figure number, title and figure caption (Do not plagiarize from the original paper). Include the citation where the figure came from in the figure caption.
- Any papers, books, webpages, etc. that you used must be included in the **References** and you must cite them in the text. You will follow the guidelines from the Journal of Experimental Biology which are copied below.

References

To cite references in the text use the Harvard (name, date) referencing system. Each reference you cite in the text must be listed in the Reference list and vice versa; 5 points will be subtracted from your total points for each citation error.

Generally, a rule of thumb is if you are talking about a biological process or piece of information that is found in a general biology book because it's considered general knowledge in the field, then you do not need to include a citation. For example: "Myoglobin is an oxygen binding protein." does not need a citation. However if you talk about a specific affinity of a myoglobin for oxygen or mention that myoglobin is not expressed in a particular organism, then these would need citations.

Use the following format for citations in the body of text (from JEB). If you have any questions ask! You will lose points if you don't follow these guidelines.

- One author – (Jones, 1995) or (Jones, 1995; Smith, 1996).
- Two authors – (Jones and Kane, 1994) or (Jones and Kane, 1994; Smith, 1996).
- More than two authors – (Jones et al., 1995) or (Jones et al., 1995a,b; Smith et al., 1994, 1995).
- Manuscripts posted on preprint servers but not yet published: include in Reference list and cite as (Smith et al., 2016 preprint).
- PhD theses: include in Reference list and cite as (Smith, 2016).
- Website URLs: cite in the text but do not include in the Reference list; provide the URL and, if the website is frequently updated, the date that the site was accessed.

For the **Reference** section list sources in alphabetical order according to last name and initials of first author. If there are more than 10 authors, use 'et al.' after the 10th author.

If you have multiple papers with the same first author, list single author papers first, then papers with two authors, then et al. papers. If more than one reference exists for each type, arrange in date order. Use a and b for papers published in the same year.

Use the following styles from JEB. If you have any questions, ask! You will lose points if you don't follow these guidelines.

Journal

Rivera, A. R. V., Wyneken, J. and Blob, R. W. (2011). Forelimb kinematics and motor patterns of swimming loggerhead sea turtles (*Caretta caretta*): are motor patterns conserved in the evolution of new locomotor strategies? *J. Exp. Biol.* **214**, 3314-3323.

Book

Hochachka, P. W. and Somero, G. N. (2002). *Biochemical Adaptation: Mechanism and Process in Physiological Evolution*. Oxford, UK: Oxford University Press.

Book chapter

Feller, G. (2008). Enzyme function at low temperatures in psychrophiles. In *Protein Adaptation in Extremophiles* (ed. K. S. Siddiqui and T. Thomas), pp. 35-69. New York: Nova Science Publishers, Inc.

Preprint server

Baillie-Johnson, P., van den Brink, S. C., Balayo, T., Turner, D. A. and Martinez Arias, A. (2014). Generation of aggregates of mouse ES cells that show symmetry breaking, polarisation and emergent collective behaviour in vitro. *bioRxiv* doi:10.1101/005215.

PhD thesis

Jones, A. R. (2016). Title of thesis. *PhD thesis*, University of Washington, Seattle, WA.

ORAL PRESENTATION: You are required to give an oral presentation on your topic. Presentations will be scheduled for the last few weeks of the semester; each semester will be assigned a specific date. We will draw numbers to determine the order of presentations. Students can swap their numbers if they want. However, this must be a mutual decision, if Student A pressures Student B to swap numbers, this will be considered unprofessional behavior, and Student A will earn an Unsatisfactory for the class.

Powerpoint (or similar) presentations must be 12-15 minutes in length with 5 minutes for questions. Presentations will cover the content in your review paper and should highlight the main points. Think

about the presentation as if you were presenting to other biology majors who will be tested on your topic. Explain concepts, define words. Failure to give a presentation will result in an Unsatisfactory grade.

Major Field Test: The ETS Major Field Test (MFT) is a comprehensive, standardized test designed to evaluate the Student's general knowledge in the sub-disciplines of Biology. Successful completion of the MFT is a course requirement. Each student is responsible for scheduling the MFT through the VSU Testing office (University Center Room 4167, Entrance #5). Scheduling can be done online: www.valdosta.edu/academics/services/testing/welcome.php. 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 at least 140 is achieved, and the student will bear the cost for any re-taking of the MFT. **Students should take the MFT by October 10. A photocopy of your ETS major field test score must be submitted to the instructor.** If you do not earn the 140 minimum you can retake the test again, but no scores will be accepted after noon on Monday, December 9, 2019. If the instructor has not received a score of 140 or more by December 9 at noon you will earn an Unsatisfactory grade (U) for the course. For more information on the Major Field Test in Biology please refer to the ETS website. (<http://www.ets.org/mft/about/content/biology>).

Biology Seminar Series: Students are required to attend all seminars in the Biology Seminar Series, and professional behavior is required. The Fall 2019 Biology Seminar Series schedule is yet to be finalized, but it is expected that there will be at least four Seminars and possibly Biology Student Master's thesis defense presentations. Seminars will be held on Tuesday's at 12:45pm – 1:35pm. Anticipate that seminars will happen each week; the seminar topic will be announced by Friday of the previous week (or will be cancelled if no seminar is scheduled). The seminars will begin promptly at 12:45, so arrive to the seminar room at 12:40. Students who arrive after the 12:45 start-time will have 2 points subtracted from their possible points. Students are required to complete an evaluation form for each seminar attended. Evaluation forms will be handed out at the beginning of the seminar. In order to receive credit for attending a biology seminar, it is the student's responsibility to see the instructor immediately after each seminar and submit his/her signed completed evaluation form. No late and/or electronically submitted evaluation forms will be accepted.

Attendance and Conduct: Attendance of all scheduled class periods (including all student presentations) and all Biology seminars 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 class periods and science seminars is not permitted.

Access Statement: Students with disabilities who are experiencing barriers in this course may contact the Access Office for assistance in determining and implementing reasonable accommodations. The Access Office is located in Farbar Hall. The phone numbers are 229-245-2498 (V), 229-375-5871 (VP) and 229-219-1348 (TTY). For more information, please visit VSU's Access Office or email: access@valdosta.edu.

Cheating / Plagiarism: Please refer to the Student Code of Ethics in the Valdosta State University Student Handbook. Please refer to the Valdosta State University, Department of Biology Plagiarism Policy. It is imperative that all student papers are the student's own original work. Plagiarism will not be tolerated. Any student caught plagiarizing shall receive a failing grade on their paper and a grade of Unsatisfactory for the course.

Title IX Statement: Valdosta State University is committed to creating a diverse and inclusive work and learning environment free from discrimination and harassment and is dedicated to creating an environment where all campus community members feel valued, respected, and included. Valdosta State University prohibits discrimination on the basis of race, color, ethnicity, national origin, sex (including pregnancy status, sexual harassment and sexual violence), sexual orientation, gender identity, religion, age, national origin, disability, genetic information, or veteran status, in the University's programs and activities as required by applicable laws and regulations such as Title IX. The individual designated with responsibility for coordination of compliance efforts and receipt of inquiries concerning nondiscrimination policies is the University's Title IX Coordinator: Maggie Viverette, Director of the Office of Social Equity,

titleix@valdosta.edu, 1208 N. Patterson St., Valdosta State University, Valdosta, Georgia 31608, 229-333-5463.

Concealed Guns on Campus: If you choose to carry a concealed weapon you are responsible for knowing and following the law. Licensed individuals may carry a handgun if it is mostly covered, does not actively draw the attention of people and is "not prominently, openly and intentionally displayed". While concealed guns are allowed in lecture and lab classrooms, no guns are allowed in faculty, staff and administrative offices and in rooms where Move On When Ready (MOWR) high school students are enrolled. It is a misdemeanor to violate this law. Further information regarding policies may be announced. If you have any questions concerning this new law, contact University Police (229-333-7861) or the University Attorney (229-333-5351).

Class Schedule (Seminars are in parentheses)

August

20 Course Introduction (no seminar)

27 **Plagiarism training must be completed (Biology and online)**; Paper topics will be chosen and presentation order will be determined (seminar: Dr. Jenifer Turco)

September

3 Discussion, questions, etc. Come to class with your papers, outline draft (due Oct 17), questions, etc. In class students will finalize topic choice if they decided to change topics (no changes after this date). You should be working on outline. (seminar: TBA)

10 **Reference page and electronic version of research and review papers are due.** Class time will be spent answering questions about both paper and oral presentation. You should be working on outline. (seminar: TBA)

17 **Detailed outline for review paper is due (bring 2 copies).** You will receive feedback from the instructor on your references and whether or not they are acceptable. Peer review of outline during class. Further discussion about paper and presentation. (seminar: Dr. Jake Price, Lowndes County Cooperative Extension Service)

24 Outlines will be handed back with feedback from instructor. Bring drafts of powerpoint presentation for informal feedback from instructor and peers. Further discussion about paper and presentation. (seminar: TBA)

October

1 Senior Questionnaire will be completed. Further discussion about paper and presentation; **bring 2 copies of paper drafts for peer review during class** (seminar: Dr. Edward Shaw, Philadelphia College of Osteopathic Medicine)

8 Fall Break

11 This is a Friday. **Papers are due by 3pm (printed and electronic versions).**

15 Oral Presentations (seminar: TBA)

22 Oral presentations (seminar: TBA)

29 Oral Presentations (seminar: TBA)

November

5 Oral Presentations (seminar: Dr. Johanne Lewis, Georgia Southern University)

12 Oral Presentations

19 No class (seminar: TBA)

26 Class will be cancelled IF we are on schedule for presentations

December

3 Oral Presentations (seminar: TBA)

If presentations need to be made up we will meet either during Seminar Time on November 12, December 3 or during finals week at 5pm on Tuesday December 10.