

BIOL 7030: Special Topics in Physiology: Environmental Influences
Fall 2014, Section A (CRN# 50989, 2 Credit hours, 2-0-2)
Department of Biology, College of Arts & Science, Valdosta State University

Instructor: Dr. Gretchen Bielmyer-Fraser
 Office: BSC 1097
 Office hours: Wed. 2-3:30 pm, Thurs. 12:30-1:30 pm, or by appointment.
 Phone: 229-333-5766 (Dept. office 229-333-5759)
 email: gkbielmyer@valdosta.edu

Pre-Requisites: Acceptance into the graduate program in biology or permission of the instructor.

Course Description: Advanced study of the influence of environmental factors on physiology at the organism, tissue, cell, and molecular levels requiring reading of the current literature and student presentations. Topics will change each time the course is offered. Course may be taken twice for credit, with permission of the instructor.

Course Objectives: Upon completion of this course the student should be able to:

- 1) Explore the current literature relating to the influence of environmental factors on physiology at various biological levels;
- 2) Analyze and present data in physiology literature to peers;
- 3) Prepare and write a summary review of assigned papers.

These objectives support the Department of Biology Selected Educational Outcomes for the Masters # 1 & 2 as listed in the VSU Graduate Catalogue.

Required Materials: None. Primary research articles assigned in lecture.

Graded Course Components: Your final grade will be based on completion of paper summaries, group participation, and a final paper and presentation (see below). Course design, schedule, due dates, and BlazeView posts/assignments will be detailed further in class while guidelines are presented below.

Grade Calculation		Grade Distribution	
Category	Possible %	Letter	Percentage
Paper Summaries	50%	A	89.5 – 100%
Participation*	10%	B	79.5 – 89.4%
Presentation	20%	C	69.5 – 79.4%
Final Paper	20%	D	59.5 – 69.4%
		F	≤ 59.4%
Total	100 %		

* **Note:** Missed lecture or inadequate participation on a lecture day results in -5%.

Course Guidelines: The topic of physiology will be divided into impact of environmental factors on organism physiology with implications on higher levels of biological organization (i.e. organism or population level), and the influence of the environment on the molecular processes, including physiological consequences. **The goal is to find two primary research papers related to both the categories and your own research area (4 total papers), so that what we discuss has meaning.** Therefore, each student will identify four papers first, and then we will all read, provide written paper summaries, and discuss these papers in class. A schedule will be developed on the first day of class.

Second, each student will serve as discussion leader of their individual papers in class based on the schedule and provide a hard copy of their chosen papers to everyone in the class. During each discussion, each non-discussion leader will provide two copies of their written paper summaries, one

for the discussion leader and the other to be assessed by the instructor (see syllabus, 60% of your grade). Details of the one page *paper summaries* are provided below. We will use our paper summaries to drive our discussion of the papers and the discussion leader will lead the charge.

Finally, each student will write a four page final paper (**due November 11, 2014**; early papers also accepted) summarizing how the four papers relate to the categories and your own research. Each student will use their own paper summary and those of their peers to help guide their writing of the final paper. All proper citations and a works cited section must be included. Details are provided under *final paper* below.

Paper Summaries: Each of the 24 total papers (n=6 students X 4 papers) will require you to read and provide a written paper summary before we meet to discuss. No late paper summaries will be accepted. Grades will be posted in BlazeView by the instructor from the copy you hand in during our discussion to me.

Each paper summary will include a brief summary and you can use the following questions as a guide:

- What is the basic premise of the research being presented by the authors?
- What is the significance of the research the authors present (e.g. hypothesis driven, observational study, and topic category)?
- What types of methods are described in the materials and methods section?
- What type of data do the authors present the results?
- What do the authors claim the results of their research means (e.g. does it support their hypothesis or significance or paradigm shift in the field)?
- Your opinion on how the results support their claims. Do the experiments (data) support their claims?
- What types of experiments or future research are proposed by the authors (if applicable)?
- How is the research the authors present related to your own research (if applicable)?

Finally, each student will provide at least two questions they encounter when writing the summary (at the end) that we can use in our discussions and that may be useful in your final paper.

Final Paper and Oral Presentation: Your final paper and oral presentation are summaries of the four primary research articles you presented in our discussions. Use your summary and those of your peers to direct your writing. Try to split your review into the two categories of physiology and compare them. Also include a closing paragraph relating the research papers to your own research or possible future research if not directly applicable. Make sure you use the standard citation style in your paragraphs and final bibliography. An example is provided below:

In general, nickel toxicity in the fish decreased as water salinity increased (Bielmyer et al., 2013).

As an example, your citation in the bibliography would follow:

Bielmyer, GK, DeCarlo C, Morris C, Carrigan T. 2013. The effects of salinity and water chemistry on acute nickel toxicity to *Fundulus heteroclitus* and *Kryptolebias marmoratus*. *Environmental Toxicology and Chemistry* 32(6): 1354-1359.

See the CSE citation style for more information: <http://library.osu.edu/help/research-strategies/cite-references/cse>

Academic Dishonesty (e.g. cheating or plagiarism): A student cheating or plagiarizing will be penalized by receiving a zero for the assignment and will be reported to the dean of students. Refer to the Student Code of Ethics in the VSU Student Handbook.

Privacy Act (FERPA): The Family Educational Rights and Privacy Act (FERPA) prohibit the public posting of grades by Social security number or in any manner personally identifiable to the individual student. No grades can be given by email or over the telephone, as positive identification cannot be made by this manner.

Students with Disabilities: Students requesting classroom accommodations or modifications because of a documented disability must let me know and must also contact the Access Office for Students with

Disabilities located in room 1115 Nevins Hall. The phone numbers are 245-2498 (voice) and 219-1348 (tty).

Tentative Schedule:

Date	Lecture Topics
8/19 (T)	Introduction; Scheduling; Find papers
8/26 (T)	1;
9/2 (T)	1;
9/9 (T)	1;
9/16 (T)	1;
9/23 (T)	1;
9/30 (T)	1;
10/7 (T)	1;
10/14 (T)	1;
10/21 (T)	1;
10/28 (T)	2;
11/4 (T)	NO CLASS
11/11 (T)	Review Papers Due; 1;
11/18 (T)	3 Presentations
11/25 (T)	THANKSGIVING BREAK
12/2 (T)	3 Presentations