ENVIRONMENTAL PHYSIOLOGY OF FISHES

FAS 6932

3 CREDITS

FALL 2015

"In physiology no discovery is useless, no curiosity misplaced or too ambitious, and we may be certain that every advance achieved in the quest of pure knowledge will sooner or later play its part in the service of man." – Ernest Henry Starling (1918)

ONLINE

THIS COURSE IN ENTIRELY WEB-BASED AND STUDENTS MAY ACCESS MODULES AS THEY ARE MADE AVAILABLE BY THE INSTRUCTOR. ASSIGNMENTS, QUIZZES, AND EXAMS MUST BE COMPLETED ON THE DATES LISTED IN THE SYLLABUS.

INSTRUCTOR: Dr. Joshua T. Patterson, Assistant Professor

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OFFICE HOURS: Available by e-mail or telephone; office visits by appointment.

COURSE WEBSITE: The course will be accessed through the UF Canvas e-learning website [http://lss.at.ufl.edu] using your GatorLink account.

COURSE COMMUNICATIONS: The course will utilize e-Learning support through UF Canvas [http://lss.at.ufl.edu] to distribute course information and provide access to materials and grades (Please refer first to Help Desk if you have difficulty with the system). A computer with speakers is required and a headset/microphone is recommended. Weekly communication with the instructor through the online portal is expected. A Q&A board will be available for general questions. Student-specific questions can be directed to the instructor through Canvas.

REQUIRED TEXT: There is no required textbook for this course. Readings enhancing learning within modules or required for class discussion will be provided by the instructor.

COURSE DESCRIPTION: This course will cover advanced topics on the physiology of fishes, their implications, and applications. We will examine features both common and distinctive, and survey the adaptations of fishes at different levels of biological organization which have allowed them to become by far the most species-rich vertebrate taxa. Maintenance of homeostasis under an array of stressors will be an overarching theme. Through literature review and a final project, students will gain an appreciation for, understanding of, and ability to formulate controlled scientific experiments to generate new knowledge about how fishes function.

PREREQUISITE KNOWLEDGE AND SKILLS: Successful completion of FAS 6932: Biology of Fishes is a prerequisite for this course. General knowledge in biological systems to the organism level will be beneficial.

COURSE GOALS AND OBJECTIVES: *By the end of this course, students will:*

- *Be able to explain how fish physiology applies across disciplines.*
- *Be able to critique biological information and ideas in writing.*
- *Compare and contrast physiological processes of fish and other animals.*
- *Formulate scientific questions and design experiments to answer them.*

COURSE POLICIES:

ATTENDANCE POLICY: As this course is entirely web-based, attendance will not be monitored. It is the student's responsibility to view online lectures, participate in discussions, and complete readings, quizzes, and exams to successfully progress through the course.

LATE WORK POLICY: Late assignments will be penalized 2 points per day unless there is a documented exceptional circumstance.

Missed exams cannot be retaken except under extenuating circumstances. Cases of serious illness, bereavement, or activities covered under the Twelve-Day Rule may be considered for make-up with appropriate documentation provided in all cases. Student computer or hardware failures are not valid excuses for missing exams. See GETTING HELP section below for details on getting technical assistance from Help Desk and how to document UF e-learning system failure.

GRADES & ASSIGNMENTS:

This course is offered for three (3) credits. It consists of weekly lectures, readings, and student-lead class discussion threads.

Due Date (11:59pm)	Item	Percentage
Sundays	Quizzes - due on weeks indicated in course schedule (10 total at 2 points each)	20
Sundays	Participation in instructor and student-lead discussion threads	15
Oct 12-17	Midterm Exam	20
Oct 19-24 and Nov 24	Experiment idea/abstract (Oct 19-24) and final project (Nov 24)	20
Dec 12-18	Final Exam	25
	Total	100

DISCUSSIONS: The number of discussions each student leads will be based the number of students in the course. Students will choose papers to discuss from an instructor-provided list and the timeline for discussions will be established in the first two weeks of the course. All students are expected to give thoughtful input on each discussion thread and the grade given for this section of the course will reflect this expectation. A rubric will be provided.

EXPERIMENT ABSTRACT & PROJECT: The written assignment has two phases (idea/abstract and final project) which will both be considered in grading, with the final project receiving the majority of weighting. The assignment is worth 20 out of a total of 100 points in the course. Completion of a peer feedback form for your group members will be included as part of the grade. Students in the same group may receive different grades for the assignment.

QUIZZES/EXAMS: Assessments will be based on material provided in lectures and assigned readings. Quizzes will be made available during the weeks they are assigned and must be completed by midnight on Sunday of a given week. Quizzes will be multiple choice and students may access each quiz only once. Mid-term and final exams will also be made available during their respective weeks and must be completed by midnight on Sunday. Exam questions may include may include multiple choice, matching, fill in the blank, filling in diagrams, short answer, and essay questions.

GRADING SCALE: A (94-100%), A- (90-93), B+ (86-89%), B (82-85%), B- (78-81%), C+ (74-77%), C (67-73%), C- (63-66%),D+ (59-62%), D (55-58%), D- (51-54%), and F (<50%).

COURSE SCHEDULE:

Week	Topics	Activities
Aug 24-29	Introduction and overview	Intro Discussion
Aug 31-Sept 5	Gas exchange and air breathing	Choose papers to guide discussions
Sept 7-12	Osmoregulation	Quiz 1 Discussion
Sept 14-19	Thermoregulation	Quiz 2 Discussion
Sept 21-26	Reproduction	Quiz 3 Discussion
Sept 28-Oct 3	Reproduction	Quiz 4 Discussion
Oct 5-10	Reproduction	Quiz 5 Discussion
Oct 12-17	Cardiovascular system	Mid-term Exam
Oct 19-24	Muscles	Experiment idea/abstract due
Oct 26-31	Digestion and assimilation	Quiz 6 Discussion
Nov 2-7	Growth	Quiz 7 Discussion
Nov 9-14	Neuron function and sensory biology	Quiz 8 Discussion
Nov 16-21	Immune function	Quiz 9 Discussion
Nov 23-28	Lipids and homeoviscous adaptation	Final project due (Nov 24)
Nov 30-Dec 5	Lipids and homeoviscous adaptation	Quiz 10 Discussion
Dec 7-9	Nitrogenous waste	Discussion
Dec 12-18	Final Exam	Final Exam

UF POLICIES:

UNIVERSITY POLICY ON ACCOMMODATING STUDENTS WITH DISABILITIES: Students requesting accommodation for disabilities must first register with the Dean of Students Office (http://www.dso.ufl.edu/drc/). The Dean of Students Office will provide documentation to the student who must then provide this documentation to the instructor when requesting accommodation. You must submit this documentation prior to submitting assignments or taking the quizzes or exams. Accommodations are not retroactive, therefore, students should contact the office as soon as possible in the term for which they are seeking accommodations.

UNIVERSITY POLICY ON ACADEMIC MISCONDUCT: Academic honesty and integrity are fundamental values of the University community. Students should be sure that they understand the UF Student Honor Code at http://www.dso.ufl.edu/students.php.

GETTING HELP:

For issues with technical difficulties for E-learning in Sakai, please contact the UF Help Desk at:

- Learning-support@ufl.edu
- (352) 392-HELP - select option 2
- https://lss.at.ufl.edu/help.shtml

** Any requests for make-ups due to technical issues MUST be accompanied by the ticket number received from LSS when the problem was reported to them. The ticket number will document the time and date of the problem. You MUST e-mail your instructor within 24 hours of the technical difficulty if you wish to request a make-up.

Other resources are available at http://www.distance.ufl.edu/getting-help for:

- Counseling and Wellness resources
- Disability resources
- Resources for handling student concerns and complaints
- Library Help Desk support

Should you have any complaints with your experience in this course please visit http://www.distance.ufl.edu/student-complaints to submit a complaint.

Disclaimer: This syllabus represents my current plans and objectives. As we go through the semester, those plans may need to change to enhance class learning. Such changes, communicated clearly, are not unusual and should be expected.