

# BIOL 3450/5450

Credit Hours 3-3-4

# ANIMAL / VERTEBRATE PHYSIOLOGY

Department of Biology

**Instructor:** Dr. Timothy J. Fort                      **Office:** BC 1100  
**Phone:** (229) 249-2643                              **Email:** tjfort@valdosta.edu  
**Office Hours:** Tuesday 2.00pm - 4.00pm or by appointment

<b>Lecture:</b>	Tuesday and Thursday	9.30 - 10. 45 am	BC 1025
<b>Laboratory:</b>	Section A - Wednesday	11.00 - 1.50 pm	BC 2070
	Section B - Wednesday	2.30 - 5.20 pm	BC 2070
	Section C - Thursday	12.00 - 2.50 pm	BC 2070

**Textbook:** Animal Physiology: R. W. Hill, G. A. Wyse and M. Anderson: 2<sup>nd</sup> Edition. 2008.

**Course Description 3450:** A study of animal physiology with an emphasis on mammalian organ systems. The molecular and cellular aspects of physiology as they relate to these systems are considered.

**Prerequisites:** BIOL 2230, BIOL 2270, and CHEM 1212, or permission of instructor.

**Course Description 5450:** Study of general physiological processes of vertebrates; emphasis at organ and organ system levels.

**Prerequisites:** Admission into the graduate program or permission of the instructor.

**Course Objectives:** By the end of this course, students will be expected to:

- (1) Collect and analyze physiological data, and present the results and conclusions in written format.*
- (2) Demonstrate an understanding of the cellular basis of physiology.*
- (3) Relate the functioning of individual organ systems to the physiology of whole organisms.*
- (4) Demonstrate competency in factual content and interpretation of the major concept areas of animal physiology.*

These objectives support the Department of Biology Educational Outcomes #'s 1, 3, 4 and the Valdosta State University General Educational Outcomes #'s 3, 4, 5, 7.

**Attendance:** Attendance of lectures is expected of all students, but is not required. Attendance of laboratory classes is mandatory. Any student missing 2 scheduled laboratory classes, without an acceptable documented reason (determined by the instructor) will receive a failing grade for the course. Student attendance of classes will be recorded.

**Conduct:** Students are expected to arrive on time and behave with respect in both lectures and laboratories. Students should not talk during lectures, but if you do not understand or do not hear something please ask for clarification. Use of cell phones during lectures and laboratories is not permitted. Cell phones must be turned off during lectures and laboratories. If your cell phone activates during a lecture you will be asked to leave. If your cell phone activates during an exam you will be asked to leave and receive 0% for that exam.

<b>Assessment:</b>	Lecture:	3 Exams	: 100	points
		Cumulative Final	: 200	points
		Paper *	: 100	points
	Laboratory:	Assignments/Homework	: 100	points
		Lab Notebook	: 25	points
		Lab Report *	: 75	points

*\* Additional requirements expected of BIOL 5450 students will be explained.*

- Assignments/Homework will be set during lab periods. You will generally have 1 week to complete the assignment.
- Any assigned work submitted late will **NOT** be graded.
- Make up examinations will only be given if an acceptable documented reason (determined by the instructor) is provided.
- Requirements for the Paper, Notebook, Assignments and Report will be explained during the semester.
- Lecture Exams: Question styles will vary depending on the topics being examined and may include (but are not limited to), multiple choice, fill in the blank, diagrams, short answer and essays.

**Cheating / Plagiarism:** Please refer to the Student Code of Ethics in the Valdosta State University Student Handbook. Any student caught cheating will be penalized, ranging from receiving a zero for that assignment or test, to failure and expulsion from the course. Please refer to the Valdosta State University, Department of Biology Plagiarism Policy. All students will be required to sign the plagiarism policy and return it to the instructor at the beginning of the semester.

**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 room 1115 Nevins 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.

### Tentative Lecture Schedule

Date	Topic	Chapter
8/19	Introduction	1,3
8/21	Molecules and Cells	2
8/26	Transport of Solutes and Water	4
8/28	Nutrition, Feeding and Digestion	5
9/2	Energy Metabolism	6
9/4	Aerobic / Anaerobic Metabolism, Energetics	7,8
9/9	Thermal Relations	9
9/11	<b>Exam #1</b>	
9/16	Neurons	11
9/18	Synapses	12
9/23	Sensory Processes	13
9/25	Nervous System Organization (Notebook, 9/26 - 5.00pm)	14
9/30	Endocrine / Neuroendocrine	15
10/2	Endocrine/ Neuroendocrine & Reproduction	15,16
10/7	Reproduction	16
10/9	<b>Exam #2</b> (Midterm - Last day to withdraw)	
10/16	Navigation	17
10/21	Control of Movement	18
10/23	Muscle	19
10/28	Muscle	19/20
10/30	Oxygen and Carbon Dioxide Physiology	21
11/4	External Respiration	22
11/6	Gas Transport (Notebook, 11/7 - 5.00pm)	23
11/11	<b>Exam #3</b>	
11/13	Circulation	24
11/18	Circulation	24/25
11/20	Water and Salt Physiology	26
11/25	Water and Salt Physiology (animal environments)	27
12/2	Kidneys and Excretion (Lecture Paper - 5.00pm)	28
12/4	Kidneys and Excretion (Lab Report & Notebook - 5.00pm)	28/29
12/11	<b>Final Exam: 10.15am-12.15pm</b>	

### Tentative Laboratory Schedule

Week Beginning	Topic
18 <sup>th</sup> August	No Labs
25 <sup>th</sup> August	Introduction & Cell/Tissue Types (microscopy)
1 <sup>st</sup> September	Osmosis (hypo-osmotic environments)
8 <sup>th</sup> September	Digestion/Metabolism
15 <sup>th</sup> September	Reflexes and Reaction Times
22 <sup>nd</sup> September	Frog Sciatic Nerve (compound nerve action potentials)
29 <sup>th</sup> September	Cockroach Nerve Cord (sensory stimuli)
6 <sup>th</sup> October	EMG and EOG
13 <sup>th</sup> October	Earthworm Gut (rhythmic muscle contraction)
20 <sup>th</sup> October	Frog Sciatic Nerve-Gastrocnemius Muscle (skeletal muscle contraction)
27 <sup>th</sup> October	Blood Pressure and ECG
3 <sup>rd</sup> November	Diving Reflex
10 <sup>th</sup> November	Pulmonary Function (frog/hamster/human)
17 <sup>th</sup> November	Clam Heart Bioassay
24 <sup>th</sup> November	No Labs - Thanks Giving
1 <sup>st</sup> December	Frog Heart (pharmacology)