BIOLOGY 319/519: GENERAL ANIMAL PHYSIOLOGY (5 credits)
FALL 2018 COURSE SYLLABUS

Instructor **Dr. Sheldon J. Cooper**
HS 142, 153, Phone 424-1102, E-mail: cooper@uwosh.edu
Office Hours: 8:30 - 9:30 and 14:30 - 15:30 R (also by appointment)

Lab Instructor (A02L) **Dr. Katrina Olsen, HS 44, E-mail: olsenk10@uwosh.edu**
Office hours to be announced at first lab meeting

Timetable

Lecture	M W	1500 - 1630	HS 270
Discussion			
A01D	R	0940 - 1040	HS 270
A02D	R	1320 - 1420	HS 270
Lab			
A01L	T	0940 - 1240	HS 167
A02L	T	1320 - 1620	HS 167

Textbook and Materials for the Class

REQUIRED: Hill, R. W., G. A. Wyse, and M. Anderson. 2016. *Animal Physiology*, 4th Edition. Sinauer Associates. Sunderland, MA.

REQUIRED: Cooper, S. J. 2018. *Biology 319/519: General Animal Physiology Lab Manual*. UW-Oshkosh.

REQUIRED: Cooper, S. J. 2018. *Biology 319/519: General Animal Physiology Lecture Manual*. UW-Oshkosh.

REQUIRED: A calculator.

Course Goals

This course is designed so that the student will achieve a general understanding of animal physiology. This objective requires a synthesis of several areas within physiology (respiration, circulation, digestion, energy metabolism, etc.) as they apply to an animal's ability to maintain homeostasis. Physiological topics will be examined from a comparative and integrative perspective rather than just studying mammalian physiological systems. The comparative nature of this course is important since students in the course are preparing for several types of future careers. For example, this course is taken by pre-med, pre-vet, pre-graduate school and graduate students. However, common functional pathways will be emphasized, thus integrating the information. The laboratory portion of this course will emphasize introductory exercises, experimental techniques, and data collection of physiological variables.

TENTATIVE LECTURE, LABORATORY, AND DISCUSSION SCHEDULE
The topic order is firm. However, we may go faster or slower in lecture than the schedule indicates.

Date	Lecture Topic	Text Chapter	Date	Lab Topic	Lab Quiz	Date	Discussion Topic
09-05	Introduction, Physiological Fundamentals	1, 2, 5				09-06	Discussion Introduction
09-10 09-12	Nutrition and Digestion Digestion	6 6	09-11	Histology		09-13	Intestinal Glucose Transport
09-17 09-19	Energy Metabolism Metabolism	7 8	09-18	Rat Anatomy	1	09-20	Genomics & Proteomics Approach to Physl. Ch. 3
09-24 09-26	Energetics of Activity Thermoregulation	9 10	09-25	Metabolic Rate and Body Size	2	09-27	Article discussion Q & A Session
10-01 10-03	Thermoregulation Thermoregulation	10 11	10-02	Insect Metabolism	3	10-04	**Exam 1**
10-08 10-10	Neural/Endocrine Control Neurons	15 12	10-09	Experimental Principles & iWorx Tutorial	4	10-11	Brain Imaging
10-15 10-17	Neurons & Synapses Synapses	12, 13 13	10-16	Physiology of Excitable Cells	E.C. quiz	10-18	Article discussion Q & A Session
10-22 10-24	Sensory Processes Sensory Processes	14 14	10-23	Special Senses & Reflexes	5	10-25	**Exam 2**
10-29 10-31	Endocrinology Endocrinology	16 16	10-30	Cardiac Dynamics	6	11-01	Article discussion
11-05 11-07	Muscle & Movement Muscle & Movement	20 20,21	11-06	Frog Skeletal Muscle	7	11-08	Muscle Animation Q & A Session

TENTATIVE LECTURE, LABORATORY, AND DISCUSSION SCHEDULE (Continued)
The topic order is firm. However, we may go faster or slower in lecture than the schedule indicates.

Date	Lecture Topic	Text Chapter	Date	Lab Topic	Lab Quiz	Date	Discussion Topic
11-12 11-14	Respiration Respiration	22 23	11-13	Respiratory System Capacities & Control	8	11-15	**Exam 3**
11-19 11-21	Respiration No Lecture - Thanksgiving	24	11-20	Hematology	9	11-22	No Discussion - Thanksgiving
11-26 11-28	Circulation Circulation	25 25,26	11-27	Blood Pressure, Heart Rate, & Pig Plucks	10	11-29	Immune Function
12-03 12-05	Osmoregulation Osmoregulation	27 28,29	12-03	Urinalysis & Blood Typing	11	12-06	Article discussion Q & A
12-10 12-12	Osmoregulation Lab Quiz 12, Final Q & A	30	12-10	No Lab		12-13	**Exam 4**

About Lecture

During lecture hours, your Instructor will talk about the topics shown in the Schedule of Activities above. Please feel free to stop your instructor to ask questions. Lectures will cover material in the text, but will also include outside material. Your lecture notes are of vital importance. Anything said in lecture could appear on an exam. If you miss a lecture, you should arrange to borrow another student's notes and then ask your Instructor about any questions you may have about the notes.

During lecture, your Instructor will show diagrams from the text and from outside materials. Thus, most students find it helpful to bring their text to lecture. The diagrams from outside materials are in the lecture manual or will be given out in class.

There will 7 pop quizzes worth 5 points each given in lecture. These pop quizzes will cover lecture material and may consist of multiple choice, fill-in-the-blank, or short answer questions. Pop quizzes will not be given during exam weeks. These pop quizzes are meant to encourage students to keep up on their studying of the lecture material.

About Discussion

During discussion, your Instructor will make important announcements and provide time to answer student questions over lecture and lab material. In addition, some supplemental lecture and lab material will be presented during discussion by the Instructor. Some discussion time will be spent preparing materials for upcoming lab experiments. During most weeks in which Q & A (questions and answers over lecture material) occurs, there will also be a discussion over a scientific article that all students must read before the discussion period. Details for this will be given by the Instructor in class. Lastly, all exams will be held in Discussion.

About Lab

You should plan on lab taking the full 3 hours each week. Do not register for this course if you have a class or work conflict with the lab. Small numbers of animals will be used in this course. All government-regulated humane procedures will be followed. If you object to animal use in experiments, you may not enjoy the work required to pass this class. Lab exercises have been designed to supplement and/or reinforce concepts taught in lecture and reviewed in discussion.

Students With Disabilities

Students with disabilities are welcome in this course. Please contact me during the first week of class so that we may arrange all possible accommodations.

Lab Notebooks (Lab Reports)

A portion of your grade will depend upon a laboratory notebook, which will consist of weekly lab reports. The lab reports will not need to contain all the procedures performed in the lab since the procedures are already written in the lab manual. Instead, the reports will have a brief introduction, a section for results (class results in tabular format and individual computer printouts) and a brief discussion explaining the results. Questions found in the text of the lab manual should be included in the discussion section. Specific instructions about lab reports will be given in discussion and lab.

Keeping good lab reports is not just another way to grade students. It is an excellent way for students to keep their lab information organized and works as a nice study aid for lab quizzes.

Lecture Exam/Lab Quiz Policy

The exams will be comprehensive. The exams may include multiple choice, fill-in-the-blank, definitions, short answer, and essay questions. Lab quizzes will include fill-in-the-blank, short answer questions, and maybe some multiple choice questions.. Lecture exams and lab quizzes will be given only at the scheduled times in the scheduled rooms. Make up of exams or quizzes will be given only when an acceptable written excuse is presented. For exams, if you wish to debate the correctness of an answer, it must be done within one week of when the exams are returned. In addition, it must be done in writing, documenting the correctness of your answer. Discussions concerning your request will be made in my office. I will not debate the correctness of your answer in the classroom. You may see me during office hours or make an appointment.

Academic Honesty Policies

Policies are clearly defined at this institution and will be followed. Students are referred to the University of Wisconsin Oshkosh Student Discipline Code as detailed in specific provisions of Chapter 14 of the State of Wisconsin Administrative Code. Any student(s) found in violation of any aspect of the above Code (as defined in sections UWS 14.02 and 14.03) will receive a sanction as detailed in UWS 14.05 and 14.06. Examples of violations include: looking at another student's exam or answer sheet and copying the answers during an exam, talking or whispering to another student during an exam, receiving text messages during an exam on an electronic device, or listening to answers or information recorded on an electronic via earphones during an exam. Sanctions range from a grade of zero for the assignment in question to an oral reprimand to expulsion from the University of Wisconsin Oshkosh.

Cell Phones and other electronic devices

All cell phones must be turned off and put away during lecture and laboratory time. If you must leave it on in case of an EMERGENCY call (i.e. life or death), set it to vibrate. Let me be very clear, I do not want to see cell phones during lecture. I can see you texting and thus not paying attention to what I am lecturing about, and this is very insulting to me and disruptive to your neighboring students. I reserve the right to stop lecturing until all cell phones are stowed. This policy applies to both lecture and laboratory. To discourage you from using your cell phone especially during lab, lab instructors will penalize you 5 points any time they see or hear your phone in the classroom.

Items such as iPods, MP3 players and so forth cannot be used during lecture or lab and especially during exams, so turn them off and stow them at the beginning of class.

E-mail policy

Part of being a student and on the way to being a professional is learning how to communicate like a professional. Along those lines, any e-mail sent to me must be addressed to either Dr. Cooper or Professor Cooper, and must be written in complete sentences, use proper grammar, and not contain any text speak. I reserve the right to not respond to e-mails that do not meet these criteria. If I do not respond, go back and check the message you sent.

Point Allocation in the Course

Assignment	Points
Exam 1	100
Exam 2	100
Exam 3	100
Exam 4	100
Lecture (pop) quizzes	35
Lab Quizzes (15 points each)	180
Lab Reports	100
Total Points =	715

Grading

Total Points	Percentage	Grade
662 - 715	93- 100	A
641 - 661	90 - 92	A-
619 - 640	87 - 89	B+
591 - 618	83 - 86	B
569 - 590	80 - 82	B-
548 - 568	77 - 79	C+
519 - 547	73 - 76	C
498 - 518	70 - 72	C-
476 - 497	67 - 69	D+
448 - 475	63 - 66	D
426 - 447	60 - 62	D-
< 425	<60	F

Early Alert

To provide you with early feedback on your performance, Bio 319 will participate in the university's Early Alert program. Early Alert Grade Reports will indicate if you have an academic performance or attendance issue that needs to be addressed. Should you receive an Early Alert, you should make arrangements to meet with the Bio 319 Instructor in order to develop an action plan to improve attendance and or academic performance in the course.

For Graduate Students Taking this as Biology 519

Graduate students will have the following additional objectives activities in order to receive graduate credit for General Animal Physiology.

Objectives:

1) Graduate students will be expected to demonstrate a greater depth of knowledge of the material compared to undergraduate students.

2) Graduate students will be expected to demonstrate a higher level of synthesis than undergraduate students.

3) Graduate students will be expected to demonstrate a more sophisticated level of communication than undergraduates.

In order to meet the graduate objectives, they will have to answer at least one additional essay question on each exam that is designed to test their ability to synthesize information from lecture and apply it to a more complex problem than is expected from undergraduates. Therefore, the point total will be slightly higher, but the grades will be based on the same percentage system as shown above. In addition, a grade less than a C is a failing grade for graduate students.

Biology 319/519 General Animal Physiology Study and Exam Tips

- Attend all lectures and take good notes. This cannot be emphasized enough.
- Do not expect to do well in the course if you just "cram" the night before an exam.
- Bring your textbook to class so that you can look at the figures while they are being projected. Your textbook has cartoon type blurbs for many of the figures. These blurbs help explain the figure. The instructor's figures lack these blurbs. Even if a figure lacks a blurb, writing down information on the figure or in the margins is a useful way to have the instructor's explanation of the figure directly attached to the figure material.
- Use written rehearsal to study. A good way to do this is to first look over one section or day of notes and then put them away and write down what you remember. Start out by writing main themes and terms in outline or flowchart format. Then go back to your notes and see what you did not remember. Then go back and write more detail into your outline or flowchart until you have gotten down the material.
- Study for 20 minutes and then take a 5 minute break. After the 5 minute break continue this 20/5 minute pattern.
- Form study groups to go over the lecture and laboratory material.
- Be prepared to ask questions in class and in discussion. If you have questions over the material that you have studied, bring them to class and ask them.
- Take your time on exams. Slow down and read each question carefully.
- If you don't know the answer to a question, skip the question until the end of the test.
- On multiple choice questions, cover the possible answers with your hand and read the question. Give yourself time to come up with an answer. Look for an answer that matches your idea from the possible choices listed.
- Short-answer or essay questions generally require definition of terms, explanation of terms, and/or examples that illustrate your knowledge of the subject in regards to the question.

Summary Sheet of Biology 319/519 Points

Activity	Points Earned	Points Possible	Subtotal Pts. Earned (C)	Subtotal Pts. Possible (D)	% (%=C/Dx100)
Lab Quiz 1		15		15	
Lab Quiz 2		15		30	
Exam 1		100		130	
Lab Quiz 3		15		145	
Lab Quiz 4		15		160	
Exam 2		100		260	
Lab Quiz 5		15		275	
Lab Quiz 6		15		290	
Lab Quiz 7		15		305	
Exam 3		100		405	
Lab Quiz 8		15		420	
Lab Quiz 9		15		435	
Lab Quiz 10		15		450	
Lab Quiz 11		15		465	
Lab Quiz 12		15		480	
Exam 4		100		580	
Lecture Quizzes		35		615	
Lab Reports		100		715	