

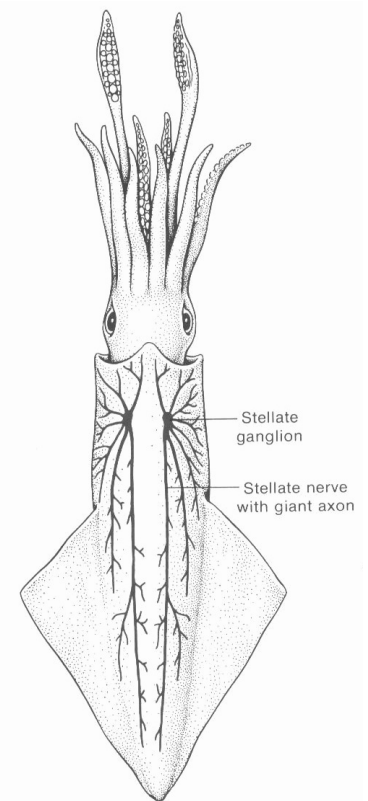
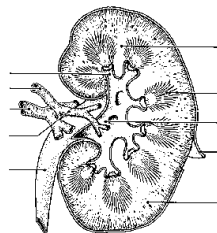
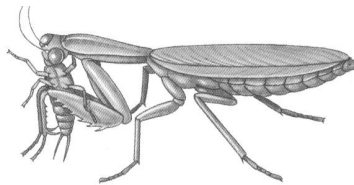
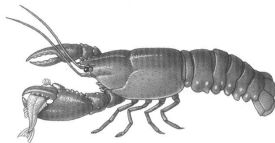
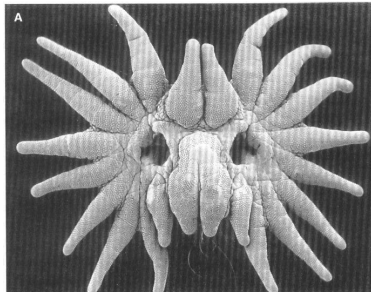
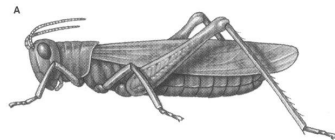
**The UNIVERSITY of TEXAS at ARLINGTON**

**DEPARTMENT of BIOLOGY**

**PRINCIPLES of ANIMAL PHYSIOLOGY**

**(Biol 3442-001)**

**Dr. David G. Bernard**



**👉 Course Schedule**

**👉 Lab Experiments**

**👉 General Information**

**Spring 2013**

# Principles of Animal Physiology

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**INTRODUCTION**

This course schedule and the performance objectives were compiled to provide a guide to **self-study** for the student so that he/she comes to lectures prepared to obtain maximum benefit therefrom. The lectures are designed to give a basic framework for understanding animal physiology. They can, at best provide an overview of physiology and a clarification of the more difficult concepts under study. In the final analysis, the amount of knowledge gained from the lectures will be proportional to the commitment the student has made toward utilizing the limited amount of lecture time. Please come to lectures prepared!

The main purpose of the laboratory is to illustrate basic physiological principles. Much of the knowledge gained from these experiments is essential to both clinical and similar applied work. The physiological concepts demonstrated in the laboratory also serve to demonstrate some of the methods used by investigators to gain scientific knowledge.

The success of the laboratory is largely dependent on the student's commitment and participation. It would be advantageous to **read** the appropriate materials **prior to** each laboratory session. The laboratory staff, instructors, equipment and animals are there to **help you** gain a working knowledge of physiology.

**GENERAL INFORMATION****STAFF****Course Instructor**

Phone: 817-272-5704

Office Hours: Rm 438/435

**David G. Bernard, Ph.D.**

Box 19498

Tue &amp; Thu: 9 - 10:30 a.m.

Email: dbernard@uta.edu

Chair, Department of Biology

Phone: 817-272-2871

Jonathan Campbell, Ph.D.

Rm 337

Laboratory Instructors

Krishnan Sheryas

Kyle O'Connell

**PREREQUISITES**

Completion of the introductory biology courses (1441 & 1442) is required. Students are encouraged to successfully complete at least one sophomore level biology course (e.g. Ecology, Biostatistics, Genetics...). An understanding of General and Organic Chemistry and Physics will definitely be beneficial.

**TEXTBOOKS**

Required: Animal Physiology: From Genes to Organisms, 2<sup>nd</sup> edition; L. Sherwood, H. Klandorf and P. Yancy; Thompson Brooks/Cole, Belmont, 2011.

**CLASS HOURS**Lecture

Tuesdays and Thursdays, 12:30 - 01:50 p.m.

Room 124 Life Sciences Building

Laboratory

Mon - Thu: 2:00 - 4:50 p.m.

Room 437 Life Sciences Building

**IMPORTANT DATES**

First day of classes	01/14	Last day to drop class	03/29
Last day of classes	05/03	<b>Final Exam</b>	<b>05/09 - 11:00 - 01:30 p.m.</b>

**STATEMENT OF POLICIES**Electronic Communication Policy

The University of Texas at Arlington has adopted the University “MavMail” address as the sole official means of communication with students. MavMail is used to remind students of important deadlines, advertise events and activities, and permit the University to conduct official transactions exclusively by electronic means. For example, important information concerning registration, financial aid, payment of bills, and graduation are now sent to students through the MavMail system. All students are assigned a MavMail account. ***Students are responsible for checking their MavMail regularly.*** Information about activating and using MavMail is available at <http://www.uta.edu/oit/email/>. There is no additional charge to students for using this account, and it remains active even after they graduate from UT Arlington.

Attendance

**Students are expected to attend all lectures.** While no formal record of lecture attendance will be kept, attending all lectures will **maximize** your understanding of the various principles of physiology to be covered.

Lecture Time

Each lecture will start at the scheduled time. Students are required to arrive for lectures **ON TIME**. Late arrivers distract other students from the lecture and are disturbing to the lecturer.

Withdrawal

The instructor follows the university’s policy as far as dropping the course is concerned. You **will receive a failing grade** if you stop attending classes and do not properly withdraw through the registrar.

Study Regimen

Reading on a lecture topic prior to class provides for familiarization and background for lecture presentations. Performance objectives for each organ system are provided in the syllabus. You are **strongly encouraged** to work through these objectives.

It is imperative that you begin a **daily study regimen in physiology** from the first lecture. By all means, **avoid permitting several days of lectures to accrue** before study and review are started.

Study Resources

**Library Information:** The Science Education and Career Center offers resource materials and study aids for students in the Sciences. Their website is: <https://www.uta.edu/cos/SECC/login.php>. You will find some useful research information for biology at <http://library.uta.edu/sel>.

Student Support Services

The University of Texas at Arlington has established a variety of programs to help students meet the challenges of college life. Support to students includes advising, counseling, mentoring, tutoring, supplemental instruction, and writing assistance. For a complete list of academic support services, visit the Academic Assistance resource page of the Office of Student Success Programs, [www.uta.edu/uac/studentsuccess/academic-assistance](http://www.uta.edu/uac/studentsuccess/academic-assistance). To help students address personal, academic and career concerns, individual counseling is also available. For more information, students are encouraged to contact Counseling Services [www.counseling.uta.edu](http://www.counseling.uta.edu) at (817) 272-3671 or visit a counselor in 216 Davis Hall.

Americans with Disabilities Act

The University of Texas at Arlington is on record as being committed to both the spirit and letter of federal equal opportunity legislation: reference Public Law 93112--The Rehabilitation Act of 1973 as amended. With the passage of new federal legislation entitled Americans with Disabilities Act - (ADA), pursuant to section 504 of the Rehabilitation Act, there is renewed focus on providing this population with the same opportunities enjoyed by all citizens.

As a faculty member, I am required by law to provide “**reasonable accommodation**” to students with disabilities, so as not to discriminate on the basis of that disability. Student responsibility primarily rests with **informing faculty at the beginning of the semester and in providing authorized documentation through designated administrative channels.**

Drop Policy

Students may drop or swap (adding and dropping a class concurrently) classes through self-service in MyMav from the beginning of the registration period through the late registration period. After the late registration period, students must see their academic advisor to drop a class or withdraw. Undeclared students must see an advisor in the University Advising Center. Drops can continue through a point two-thirds of the way through the term or session. It is the student’s responsibility to officially withdraw if they do not plan to attend after registering. Students will not be automatically dropped for non-attendance. Repayment of certain types of financial aid administered through the University may be required as the result of dropping classes or withdrawing. Contact the Financial Aid Office for more information.

Examinations/Grading Policy

Seventy-five percent (75%) of your grade will come from three (3) Intrasectional and one (1) Final Examination. The other 25% will be calculated from your lab grade. Each Intrasectional will consist of at least **fifty** (50) questions and will be 80 minutes in duration. The Final Examination is comprehensive, will consist of at least **seventy-five** (75) questions and will be two and a half hours in duration. The final grade for the course will be calculated as follows:

1st Exam	2nd Exam	3rd Exam	Final	Lab Grade
18%	18%	19%	20%	25%
A ≥ 89.5%	B = 79.5 - 89.4%	C = 69.5 - 79.4%	D = 59.5 - 69.4%	F < 59.5%

***NOTE: You will be penalized a minimum of 5 points each if you: do not turn in your exam on time, turn in your examination material without your name & UTA ID #, or do not follow instructions during the examination.***

Missed Exams

The Department **strongly discourages** make-up tests, and will offer such a test only after receiving a validated excuse from the Office of your Dean, for medical problems or emergency situations. Tests will be administered within a two week period following the scheduled examination. There will be no exceptions!

Examination Conduct

1. No student will be permitted into the Examination Room with books, notes or other paraphernalia; (exception: handbags and calculators).
2. All students must be seated in their seats (sometimes assigned) at least **five** minutes prior to the scheduled starting time.
3. The doors will be closed fifteen minutes after the scheduled starting time. Students arriving after that time may not be admitted into the Examination Room. **Extra time will not be given to students arriving late for the examination.**
4. **Restroom breaks are NOT allowed.**
5. During the course of the examination, students will remain seated. Questions and needs of individual students will be addressed by proctors coming to the students upon the student raising his/her hand.
6. The instructor will supply scrap, scratch or extra paper for you use which will be collected with the exam booklet at the end of the examination.
7. During the last five minutes of the exam, students are to remain seated until the end of the exam. The instructor will not entertain questions related to the exam during this time.
8. Upon completion of the exam, each student is to remain seated, raise his/her hand and the exam materials will be collected by the proctors. At no time is the student to leave his/her seat and take the exam materials to the proctor or other areas of the room.
9. After collection of the exam material, the student is to promptly and quietly leave the Examination Room, as the examination may still be in progress.
10. I do not answer exam questions during the last 5 minutes of an exam.
11. Smoking, eating or drinking is not permitted in the Examination Room.

**Please do not remain outside the classroom door after leaving the Examination Room.**

Academic Integrity

It is the philosophy of The University of Texas at Arlington that academic dishonesty is a completely unacceptable mode of conduct and will not be tolerated in any form. All persons involved in academic dishonesty will be disciplined in accordance with University regulations and procedures. Discipline may include suspension or expulsion from the University.

“Scholastic dishonesty includes but is not limited to cheating, plagiarism, collusion, the submission for credit of any work or materials that are attributable in whole or in part to another person, taking an examination for another person, any act designed to give unfair advantage to a student or the attempt to commit such acts.” (Regents’ Rules and Regulations, Part One, Chapter VI, Section 3, Subsection 3.2. Subdivision 3.22).

Grade Grievance Policy

The instructor follows the university’s policy as far as contesting one’s grade is concerned.

Final Review Week

A period of five class days prior to the first day of final examinations in the long sessions shall be designated as Final Review Week. The purpose of this week is to allow students sufficient time to prepare for final examinations. During this week, there shall be no scheduled activities such as required field trips or

performances; and no instructor shall assign any themes, research problems or exercises of similar scope that have a completion date during or following this week unless specified in the class syllabi. During Final Review Week, an instructor shall not give any examinations constituting 10% or more of the final grade, except makeup tests and laboratory examinations. In addition, no instructor shall give any portion of the final examination during Final Review Week.. Classes are held as scheduled during this week and lectures and presentations may be given.

### Bomb Threats

If anyone is tempted to call in a bomb threat, be aware that UTA will attempt to trace the phone call and prosecute all responsible parties. Every effort will be made to avoid cancellations or presentations/tests caused by bomb threats. Unannounced alternate sites will be available for these classes. Your instructor will make you aware of alternate class sites in event that your classroom is not available.

### **AFTER HOURS SAFETY ESCORT**

The Sam Mav Escort service provides a service to assist students, faculty, staff and campus visitors to reach their destinations after regular business hours. The hours of service are 7:00 p.m. to 1:00 a.m., Sunday through Saturday. 817-272-3381

### **REGULATIONS GOVERNING PHYSIOLOGY LABORATORY**

For the safety of yourself and others, no inappropriate behavior is permitted in the laboratory. You will not be handling dangerous or toxic chemicals. MSDS are available in the laboratory and in the Biology main office. Exercise due caution in the laboratory as necessary.

1. Each student registered for laboratory courses in Physiology is required to be present and to participate in each assigned experiment.
2. Attendance in the laboratory is mandatory for all students. If there is an emergency, you should notify the instructor or one of the Lab instructors.
3. Eating and/or smoking in the laboratory is **NOT** permitted.
4. Students will be organized into groups for the conduct of laboratory experiments.
5. The group must select an individual for the listed designation for each experiment:
  - a. Director of the Experiment  
(reads the experiment to the group as the experiment proceeds)
  - b. Surgeon
  - c. Assistant Surgeon
  - d. Recorder
  - e. TechnicianThe group should arrange for a rotation of members in the several positions for each experiment.
6. Each group is responsible for the care of the instrumentation, surgical instruments, glassware, etc. in their work areas.
7. Each group is responsible for the orderliness and cleanliness of their work area.

**MANDATORY ONLINE SAFETY TRAINING**

1. Go to <http://www.uta.edu/training>.
2. Log on using your network log-on ID and password (what you use to access email). If you do not know your NetID or need to reset your password, visit [www.https://webapps.uta.edu/oit/selfservice/](http://www.https://webapps.uta.edu/oit/selfservice/).
3. The available courses for completion will be listed under "Training I'm Enrolled In." Complete the course entitled 'Student Lab Safety Training - General.' \*\*\*NOTE: If you completed Wet, Dry or Biology Lab Safety Training course last semester for another class, that training is still applicable until the end of this academic year. Please follow instructions in #4 to print the certification page for your TA.
4. Go to 'Training I've Completed' and print the displayed page for your TA. Verify that it shows clearly your name, and that 'General, Wet, Dry or Biology' training is completed/passed and the date when the training was completed. If you have just completed the training but it is not updated on the 'Training I've Completed' page, please log out of the system and log back in. If the training still does not show up on this page, call the Helpline at 817-272-5100.
5. If you were enrolled in a course with a lab last semester and did not complete the training or if you do not see training for this academic year listed, email [compliance@uta.edu](mailto:compliance@uta.edu) providing your name, a contact phone number, NetID and course (e.g. BIOL 1441-005) and request the appropriate training for your course.
6. Students who have not completed the training by census date may be dropped from the lab (and consequently the lecture).
7. Lab Safety Training is required to be completed once every academic year. Training completed in the Fall semester is valid for the Fall, Spring and Summer sessions. It is your responsibility to print your training certification page and turn it in each semester to your TA for each course with a lab you are enrolled in.

For training specific questions, contact the Environmental Health and Safety office at 817-272-2185.

For technical assistance with the training, please contact the Office of Institutional Compliance at 817-272-5100 or email [compliance@uta.edu](mailto:compliance@uta.edu).



**SCHEDULE OF EXERCISES****Spring 2013**

Mondays, Tuesdays, Wednesdays & Thursdays 2:00 - 4:50 p.m.  
Room 437 - Life Science Building

Instructors: Shreyas Kirshnan  
Kayle O'Connell

<b>Exercise No.</b>	<b>Title</b>	<b>Week of</b>
I.	Labs do not meet during the first week	<b>Week 01</b>
II.	Orientation, Instrumentation, Experimental Design & Analysis, Terminology	<b>Week 02</b>
III.	Cutaneous Receptors, Tutorial Review	<b>Week 03</b>
IV.	Nerve Action Potential & Conduction Velocity	<b>Week 04</b>
V.	Neural Control of Muscle Contraction & Summation, Tetanus, & Fatigue	<b>Week 05</b>
VI.	<b>Lab Exam I</b>	<b>Week 06</b>
VII.	Cardiovascular Physiology, Blood Pressure & Heart Sounds	<b>Week 07</b>
VIII.	Electrocardiogram	<b>Week 08</b>
	<b>Spring Break, Enjoy!!</b>	<b>Week 09</b>
IX.	Effects of Drugs on the Heart	<b>Week 10</b>
X.	Pulmonary Function and Volume	<b>Week 11</b>
XI.	<b>Open Lab</b>	<b>Week 12</b>
XII.	<b>Lab Exam II</b>	<b>Week 13</b>

**SCHEDULE OF CLASSES**

**SPRING 2013**

WEEK OF:	LECTURE TOPIC
01/14	Introduction, <b>Chapters 1 and 2.</b> Subdisciplines of Animal Physiology, Central Themes and Animal Experimentation in Physiology, Formulating and Testing hypotheses, Importance of Physiological State in Research, Properties of Solutions, Biomolecules, Enzymes
01/21	<b>Chapters 2 and 3</b>
01/28	<b>Chapters 3 and 4</b>
02/04	<b>Chapter 5 and Review</b>
Th - 02/07	<b>Lecture Examination I</b>
02/11	<b>Chapters 5 and 6</b>
02/18	<b>Chapters 7 and 8</b>
02/25	<b>Chapters 8 and 9</b>
02/28	<b>Lab Exam I</b>
03/04	<b>Chapter 9 and Review</b>
Th - 03/07	<b>Lecture Examination II</b>
03/11 - 03/15	<b>Spring Vacation, enjoy!</b>
03/18	<b>Chapter 11</b>
03/25	<b>Chapters 11 and 12</b>
04/01	<b>Chapters 12 and 13</b>
04/08	<b>Chapter 13</b>
04/11	<b>Lab Exam II</b>
04/15	<b>Chapter 14 and Review</b>
04/18	<b>Lecture Examination III</b>
04/22	<b>Chapter 14 and 16</b>
05/29	<b>Chapter 16 and Comprehensive Review</b>
Th - 05/09	<b>FINAL EXAMINATION 11:00-1:30 p.m.</b>

# Enjoy Your Summer

**STUDENT LEARNING OUTCOMES**

The objectives of this course is to provide the student with a broad overview of Animal Physiology, with emphasis on the human body. The course is not intended to give a detailed analysis of any system, but to allow the student to appreciate the organization and complexity of the different systems in the animal kingdom. Some integration of function across different levels will be dealt with. The goal is for the student to learn the language of physiology and the basic concepts that give the language meaning.

**Instructional Objectives:** To explain and clarify concepts in Animal Physiology and assist students in solving physiological problems.

**Performance Objectives:** Students will be expected to list, describe and explain basic physiological concepts. They will also be expected to define and explain physiological functions and use this information to solve physiological problems. They will be expected to recognize and recall information so the knowledge can be reproduced or communicated without a verbatim repetition. They should also be able to solve physiological problem by applying what they have learned. They will be expected to know how animals have been use to further our understanding of physiology in a broad context.