FLORIDA ATLANTIC UNIVERSITY™

Undergraduate Programs—COURSE CHANGE REQUEST[1]

UUPC APPROVAL _____
UFS APPROVAL _____
SCNS SUBMITTAL _____
CONFIRMED _____
BANNER POSTED _____
CATALOG _____

DEPARTMENT: BIOLOGICAL SCIENCE	COLLEGE: COLLEGE OF SCIENCE
COURSE PREFIX AND NUMBER: PCB 4723L	CURRENT COURSE TITLE: COMPARATIVE ANIMAL PHYSIOLOGY LAB
CHANGE(S) ARE TO BE EFFECTIVE (LIST TERM): FALL 2013	____ TERMINATE COURSE (LIST FINAL ACTIVE TERM):

CHANGE TITLE TO:

CHANGE PREFIX FROM: TO:

CHANGE COURSE NO. FROM: TO:

CHANGE CREDITS[2] FROM: TO:

CHANGE GRADING FROM: TO:

CHANGE WAC/GORDON RULE STATUS[3]
ADD*_____ REMOVE _____

CHANGE GENERAL EDUCATION REQUIREMENTS[4]
ADD*_____ REMOVE _____

*WAC and General Education criteria must be clearly indicated in attached syllabus. For WAC Guidelines: *www.fau.edu/WAC*.
Please attach General Education Course Approval Request: *www.fau.edu/deanugstudies/GeneralEdCourseApprovalRequests.php*

CHANGE DESCRIPTION TO:

CHANGE PREREQUISITES/MINIMUM GRADES TO*:

EXISTING

NEW PRE/REQ.
BSC 1010,BSC1010L,BSC 1011,BSC 1011L,CHM 2045,CHM 2045L CHM 2046,CHM 2046L,CHM 2210,CHM 2211

MINIMUM PASSING GRADE C-

EXISTING COREQUISITES:

CHANGE COREQUISITES TO*:

CHANGE REGISTRATION CONTROLS TO:

*Please list existing and new pre/corequisites, specify AND or OR and

Attach syllabus for **ANY** changes to current course information.

Should the requested change(s) cause this course to overlap any other FAU courses, please list them here.	Please consult and list departments that might be affected by the change(s) and attach comments.[5]

Faculty contact, email and complete phone number:
David Binninger; binninge@fau.edu; 561.297-3323

Approved by:	*Date:*
Department Chair: _____	Feb. 27, 2013
College Curriculum Chair: _____	3/21/13
College Dean: _____	3/20/13
UUPC Chair: _____	3/22/13
Undergraduate Studies Dean: _____	3/27/13
UFS President: _____	
Provost: _____	

1. **Syllabus** must be attached; syllabus checklist recommended; see guidelines and checklist: *www.fau.edu/academic/registrar/UUPCinfo*
2. Review **Provost Memorandum: Definition of a Credit Hour** *www.fau.edu/provost/files/Definition_Credit_Hour_Memo_2012.pdf*
3. **WAC approval** (attach if necessary)
4. **Gen. Ed. approval** (attach if necessary)
5. **Consent** from affected departments (attach if necessary)

Syllabus

Comparative Animal Physiology Lab PCB 4723L 1 CR HR Fall 2013
CRN # 13174 SECTION # 1 MON 10am – 11:50am ROOM #SC 115

INSTRUCTOR: Dr. Milton
Sanson Science Rm 288 – 2nd floor of breezeway on the WEST side of the building
Phone: 297-3327
Email: smilton@fau.edu

TA INFORMATION: Name Patricia Sposato
Email psposato@fau.edu
Office hours: TBA or by appointment M 9-10am & 12-1pm
Location:SC 283 & SC 177

Course Prerequisites: BSC 1010, BSC 1010L; BSC 1011, BSC 1011L,CHM 2045,CHM 2045L, CHM 2046, CHM 2046L, CHM 2210, CHM 2211, with a Minimum grade of C-
Co-requisite: PCB 4723L

INTRODUCTION

Our knowledge of the biological world is based on the ability to ask questions and test hypotheses. An important aspect of learning is participating in the scientific process and developing creative and critical reasoning skills. The main goal of this course is to encourage student participation in the scientific process and to gain experience in the excitement of discovery and in the satisfaction of solving problems and observing physiological phenomena. Hands on participation will increase the depth of your understanding of physiological principles discussed in class.

While some experiments will be straightforward, the laboratory exercises, where possible, will encourage you to ask questions, propose hypotheses, and make predictions prior to initiating laboratory work. You then synthesize results from observations and experiments and draw conclusions and apply their results to new problems.

You will be challenged to think and develop critical thinking skills. To further emphasize these skills, medical correlate questions may be posed to assist students in applying knowledge and principles to daily life and to the field of medicine.

Upon completion of this course, you should demonstrate the following:

- Understanding of the scientific method; the generation of hypotheses and the testing of predictions.
- Understand experimental design and the importance of controlled experimentation.
- Increased ability to critically evaluate data and experimental designs.
- Gain experience in methodologies and equipment frequently used by physiologists in the demonstration of physiological phenomena and testing of basic principles.
- Obtain direct experience in observations of physiological phenomena.
- Appreciate and compare functional processes of animals adapted to different environmental conditions by exposure to some of the principles discussed in lecture - ideas are better remembered after hands-on experience.
- Recognition of the importance of accurate observations and data collection.

Develop skill in the use of computers for research and data acquisition, as well as graphical presentation of scientific data.

Gain experience in the oral and written presentation of scientific data in a professional manner.

As in the lecture part of this course, the emphasis in lab will be on communication – graph preparation, interpretation, and discussion. Thus there will be a graphing exercise and 2-3 pages of writing almost EVERY WEEK. Written reports should be in Times New Roman font, 12 pt, with no more than 1 inch margins all around, double spacing is ok.

You are not graded solely upon the results of the experiments or how closely your data match "the correct data" (of which there is no-such-thing!) but on the creativity (well, within limits) and enthusiasm you bring to your efforts.

In order to achieve the course objectives, live animals (mostly you!) as well as computer simulations must be used. The experiments have been designed so that animal suffering is minimized. If you are morally opposed to animal use for teaching purposes, you will want to take an alternative laboratory course. Computer simulations allow us to explore more complex ideas than the general physiology laboratory is equipped to do, while actual experiments provide more practical experience with a variety of procedures and animals.

Lab Syllabus –As always, this is subject to change - (note TBAs) depending, for example, on animal availability

DATE	Lecture Topic	Lab
Jan. 8	Homeostasis	Dissection of a Scientific Paper **Background reading**: "How to read a scientific paper" – available on Blackboard **To do:** answer questions from lab manual **Hand in**: group answers
10	Proteins and molecular biology	
15	Membranes	How to Write a Scientific Paper – in class workshop on graphing and writing. PLEASE BRING YOUR LAPTOP TO CLASS IF YOU HAVE ONE **To do:** Intro to Medline exercise
17	Membranes II	
22	Nerves I	Neurophysiology of Nerve Impulses – computer simulation PhysioEx #3: – PLEASE BRING YOUR LAPTOP TO CLASS IF YOU HAVE ONE **To do: exercise in notebook, iWorx Tutorial** (lab manual)

		To do: graph and describe/discuss PhysioEx results (in sentence form) *TAs check notebook before you leave*
24	Nerves II	
29	Senses: Eyes & vision	Stretch receptors lab – **WEAR SHORTS!** **To do:** Write the results and calculations in a RESULTS section as though this were a scientific paper, answer questions for exercises 1,2, and 3 in a DISCUSSION section. **Hand in:** graph of PhysioEx results from last week, with a paragraph for each graph describing results in sentence form.
31	Senses: Mechanoreceptors	
Feb 5	Senses: Special senses	Build your own Homonculus! **WEAR SHORTS!** **To do:** Homunculus: Graph results and discuss (graph + 2 pages discussion) **Hand in:** results and discussion section from stretch receptor lab last week
7	**Exam 1 thru Mechanoreceptors**	
12	Cardiac physiology I	Heart Dissection and EKG, PhysioEx exercise. PLEASE BRING YOUR LAPTOP TO CLASS IF YOU HAVE ONE **Hand in**: homunculus writeup **To do:** Analyze data (and graph) and answer EKG lab questions in paragraph form.
14	Cardiac Physiology II	
19	Pulmonary I	Respiration / Respiratory System Mechanics: **To do**: answer questions, also write Materials and Methods section for respiratory lab **Hand in:** EKG writeup and data analysis *TAs check notebook before you leave*

21	Pulmonary II	
26	Pulmonary III (non-mammals)	Walking lab: How to design a scientific experiment **SHOW your TA**: walking lab prelab **Hand in**: Pulmonary lab questions and Materials and Methods **To do**: Graph results and discuss (2 pp + graph) for walking lab, write abstract
28	**EXAM II thru Pulmonary III**	
March 4-10	**Spring Break !**	
12	Respiratory pigments	Oxygen dissociation curve of hemocyanin **(or TBA)** **To do**: Results (graph plus writing) and discussion section for hemocyanin lab **Hand in**: Walking lab results, abstract
14	Dealing with Anoxia	
19	Diving	Anoxia tolerance in fruit flies **(or TBA)** **Hand in:** O2 dissociation writeup **To do:** Diving prelab for next week, results and discussion section for anoxia lab, with references (literature cited) – *attach a copy of the abstract page for **each** scientific paper that you cite in your references section to the back of the writeup.*
21	Scaling and heat balance	
26	Hibernation	Diving lab 1 – YOU WILL GET WET – bring a towel and tie you hair back. Skip the great makeup… **Hand in**: results and discussion section for anoxia lab, diving prelab, post lab hypotheses to test next week *TAs check notebook before you leave*
Mar 28	Muscles	
April 2	**EXAM III (thru muscles)**	Diving lab 2 **To do:** results and discussion of diving lab, with references – *attach a copy of the abstract page for **each** scientific paper that you cite in your references section to the back of the writeup.* **Hand in: NOTHING (hurray!)**

4	Locomotion	
9	Fluid balance	Fluid balance and kidney function, prep for mini-symposium **To do:** results and discussion section for kidney function, make powerpoint for mini-symposium **Hand in:** diving lab, with references and abstracts *TAs check notebook before you leave*
11	Kidneys I	
16	Kidneys II	**Laboratory mini-symposium – powerpoint presentations** **Hand in:** kidney lab
18	Kidneys III	
24	REVIEW	No labs

Students are expected to complete readings and homework as assigned. Studying and coursework should occupy approximately 2 hours of outside time for each hour spent in class.

The schedule of topics and assigned readings is subject to change during the semester, depending on the needs of the class. Changes will be announced in class and via Blackboard.

Lab Requirements:

1. Attendance: is mandatory. If you absolutely must miss a class see Dr. Milton to be excused IN ADVANCE and to arrange a make-up class. Absences not previously approved or accompanied by your obituary will result in a 10 point deduction from that lab write-up IN ADDITION to the zero you will receive for attendance that day.

Students will not be penalized for absences due to participation in University-approved activities, including athletic or scholastics teams, musical and theatrical performances, and debate activities. These students will be allowed to make up missed work without any reduction in the student's final course grade. Reasonable accommodation will also be made for students participating in a religious observance. Also, note that grades of Incomplete ("I") are reserved for students who are passing a course but have not completed all the required work because of exceptional circumstances. A grade of "I" will only be given under certain conditions and in accordance with the academic policies and regulations put forward in FAU's University Catalog. The student must show exceptional circumstances why requirements cannot be met. A request for an incomplete grade has to be made in writing with supporting documentation, where appropriate.

2. Clothing: Lab coats are optional, but wear clothes you won't mind getting stained or damaged. Shoes are of course required – note that some labs require running, and in another you will get WET!

3. Notebook: A spiral bound notebook is fine. Your name and lab section should be on the front. These must be brought to lab EVERY TIME for taking notes on procedure (especially where changes from the lab handouts are introduced) and for data. Otherwise a strict format is not required, but try to be neat and logical - make life easy on yourself! Each week should also have the lab title and date, including the YEAR.

Notebooks will be collected periodically and examined/graded in class by the TA's.

4. Neatness: Please make sure everything is cleaned up before you leave the lab each day. Each group should wash its own instruments and equipment, bag biological waste with the date and contents on the bag and place it in the fridge, and make sure everything is returned to its proper place.

Academic Integrity: Cheating will not be tolerated and may reflect badly in your future professional career. A student found to be cheating on an exam or plagiarizing a report will receive a zero on that exam or report. Cheating may result in disciplinary action. The use of cell phones, pagers or other electronic devices is strictly prohibited during an exam.

Problem Solving: If you have a problem, question, complaint or concern the first person to see is your instructor.

Class Conduct: It is expected that all class members will exhibit respectful and courteous behavior in their words and actions during class sessions and in all interactions with other students, faculty, staff and graduate teaching assistants. Examples of respectful behavior include the following:

- Turning off cell phones and pagers when entering the classroom.
- Using computers only for lecture-related material
- Putting away newspapers and other reading materials unrelated to class.
- Arriving in the classroom on time so that the class session is not interrupted by tardiness.

Disability Policy Statement: In compliance with the Americans with Disabilities Act (ADA) students who require reasonable accommodations due to a disability to properly execute coursework must register with the Office for Students with Disabilities (OSD) – in Boca Raton SU 133 (561-297-3880); in Davie, LA 240 (954-236-1222) and follow all OSD procedures.

Code of Academic Integrity: Students at Florida Atlantic University are expected to maintain the highest ethical standards. Academic dishonesty is considered a serious breach of these ethical standards. Harsh penalties are associated with academic dishonesty. For more information, see University Regulation 4.001 at
http://www.fau.edu/ctl/4.001_Code_of_Academic_Integrity.pdf

Grading:

Points earned will be as follows:

Attendance, preparedness, participation, cleanup, etc..	130 points
(Please note – coming to class and then sitting like a bump on a log will not earn you the full 10 pts per lab) (13 lab periods x 10 pts/session)	
Notebook – general data keeping –4 checks x 10 pts ea	40
Dissection of paper (lab 1)	20 + 10
Medline Exercise	10
How to write exercise	40
Nerve lab – PhysiolEx#3	30
Stretch receptor writeup	40
Homunculus – graph and discussion	40
Heart Dissection and EKG writeup	40
Heart PhysioEx	10
Respiratory system - questions	20
Materials and Methods	20
Walking lab	
Prelab	15
Results, graph, and discussion	40
O2 dissociation –writeup	40
Anoxia tolerance writeup	100
With abstracts	10
Diving lab	
Prelab	15
Hypotheses to test	10
Writeup	40
Fluid balance writeup	40
Mini-symposium powerpoints	50
==========	======
Total	810 points possible

Grading scale:	90% or more (738 pts minimum) =	A
	88-89%	A-
	85-87%	B+
	80-84%	B
	78-79%	B-
	76-77%	C+
	70-75%	C
	68-69%	C-
	66-67%	D+
	60-65%	D
	less than 60%	F