

## Bio 2430 Anatomy and Physiology Lab. General information and policies.

### Lab manual :

Human A & P Lab Manual by Marieb and Mitchell ( Cat version) 9th Edition (required)

**Lab coordinator:** Dr. T. Prabhakaran, Rm 434; Phone 245-2326; e-mail tp03@txstate.edu

**Overview of laboratory exercises:** Lab work is an integral part of A & P 2430 course and is designed to supplement and enhance the information that you gain from the lecture and the text book. One 3-hour lab per week will give a hands-on experience in learning the structure and function of the human body. Most of the anatomy sections of the course are primarily covered in the lab and therefore the work you do in the lab has a great bearing on your overall performance in the course. I urge you therefore to take the lab work seriously and diligently, if you want to make your attempt at learning human anatomy and physiology enjoyable and profitable.

The lab schedule gives you the exercises that you will cover during each lab and the lab review questions that you have to complete each day. **You are advised to read the exercises before you go to each lab.** What you achieve in this course will mostly depend on how well you work in the lab and therefore it is necessary for you to utilize the lab time to the fullest, and in the most effective manner. You will be working in small groups most of the time, and I encourage you to get involved in meaningful group discussions on topics you deal with in the lab. Group interaction has a positive influence on learning as it tends to make complex problems less complex and easier to comprehend. I suggest that you work in groups even outside the lab, whenever you are preparing yourself for a lab test or a class test.

**Lab Instructor:** Your lab instructor is a Biology Graduate student. The instructor's role is to help you complete the lab exercises and to answer questions to the best of his/her abilities. You are required to complete the listed lab review sheets during the lab period so that your work can be checked before you leave the lab. I expect you to cooperate with the lab instructor and make his/her task both enjoyable and rewarding. If you disagree with your lab instructor either on grading or on the lay out of the lab, I suggest that you talk it over with the instructor privately outside the lab and settle the issue amicably. If you do not succeed in resolving the issue, you must take it up with the lab coordinator before you go to the Chairman of the Department or to the Dean of the School of Science. If you need extra help from the lab instructor, you should utilize his/her office hours for that purpose. If you cannot go to your lab due to illness or due to some other personal problems, you must contact the lab coordinator and your lab instructor immediately and make arrangements to make up the lost lab within the week.

You will be given a lab hand-out for each of the topic listed in the schedule, which outlines the day's work and sets the scope of the work you are required to do during each lab. The weekly quiz will be based on the work you do in accordance with the instructions in the hand-out. Make sure you complete the work outlined in the hand-out before you leave the lab.

The weekly quiz will be given at the start of each lab, and will last for 10 minutes. If you are late by more than ten minutes, you forgo your right to take the quiz.

**Lab Grade:** Lab makes up 25% of the course grade and the lab grade is determined by your lab instructor on the basis of your performance in lab quizzes, and lab tests. The distribution of points will be as follows:

4 lab tests (required)	400 points
7 lab quizzes (can drop one)	100 points
10 completed lab review sheets	50 points

No make-up lab exam will be given. However, you will be allowed to take the lab exam with any of the other 15 sections during the week, provided you have a valid reason for missing the exam.

You must contact the lab coordinator (or your lab instructor) if you happen to miss a lab test due to unforeseen circumstances. You will be allowed to drop one lab quiz before the final lab average is calculated.

**Lab attendance:** Your lab instructor will keep a record of your attendance and lab participation. If you miss a lab, you are required to provide a valid document (from the infirmary, the doctor etc) that explains the reasons for your absence. If you **miss two labs without any valid reason**, your final letter grade for the course will drop by 10 points, and **three or more unexcused absences will result in your failing the course**. If you walk out of the lab without informing the lab instructor, you will not only be marked absent for the day, but your quiz score for the day will also be cancelled.

### Bio 2430 Lab Schedule Spring 2008

Lab	Date	Topics	Exercises	Review Sheet
1	1/14-17	Introduction. Microscopy Cell structure. Mitosis. Membrane transport (diffusion, osmosis). pH. Anatomical terminologies. Organ systems.	1 - 5	p12 Q 6 p13 Q 9 p 25 Q 1 p49 Q 3 p51 Q 8, 9 p52 Q 12,13
2.	1/21-24	<b>no lab</b>		
3.	1/28-31	<b>Lab quiz 1</b>  Histology - Epithelial and Connective tissues. Epithelial membranes. Integumentary system. Skeletal system: Skull bones	6 – 10	p86 Q 7,9,10 p87 Q14 p101 Q 1,2 p104 Q 11 p109 Q 1,2 p120 Q 4,5,9,15
4.	2/4-7	<b>Lab quiz 2</b>  Vertebral column and thorax Appendicular skeleton. Joints	10 - 13	p141 Q 3-10 p142 Q 11-16 p143 Q 17 p144 Q 6,7 p162 Q 16 p167 Q 4 p183 Q 2
5.	2/11-14	<b>Practical 1</b>  Muscle tissues(p 66). Structure of	14,15	p193 Q 1

Skeletal muscles. p194 Q 6  
 Neuromuscular junction. p232 Q 11  
 p233 Q 12  
 p234 Q 13

Skeletal muscles -- Cat dissection (p 704-719)

6. 2/18-21

**Lab Quiz 3**

Skeletal muscles continued; 15  
 Muscle physiology - Electromyogram  
 Tetanus

Nervous system. Neurons and neuroglia 17, 19 p265 Q3  
 Brain , cranial nerves p266 Q 4  
 p299 Q 1  
 p302 Q 13, 14  
 p303 Q 15

7. 2/25-28

**Lab quiz 4**

Spinal cord. Reflex action and reflex arc 21- 22 p337 Q 2  
 Human reflexes; reaction time p338 Q 3, 4, 6

Sense organs, eye and ear 24, 25 p378 Q 6  
 p380 Q 14,19  
 p381 Q 20, 23, 24  
 p393 Q 1

8. 3/3-6

**Practical 2**

Endocrine system 27 p411 Q 7  
 p413 Q 13  
 p414 Q 14

**Spring-break**

9. 3/17-20

Composition of blood 29 p438 Q 7,8  
 Heart, structure and function 30, 31 p 440 Q 16, 17, 18  
 p453 Q 1  
 p455 Q 7,9, 11, 12  
 ECG and heart beat p 456 Q 13,14  
 p467 Q 3, 4

10. 3/24-27

**Lab quiz 6**

Blood vessels; arterial and venous systems 32 p485 Q1, 2  
 p489 Q 8-13

	Cat dissection		p490 Q 19,20 p508 Q 18-21
	Fetal circulation (p483)		p534 Q 5, 11
	Blood pressure; Pulse	34	p535 Q 18
	Lymphatic system	35	
11. 3/31-4/3	<b>Practical 3</b>		
	Digestive system. Histology studies	38	p 593 Q 7 p 594 Q 8,9
	Enzyme activity - computer simulation ( lab report for extra credit )		p 596 Q 16,19,20 p 605 Q 1, 2, 3, 5
12. 4/7-10	<b>Lab quiz 7</b>		
	Respiratory system.	36, 37	p 546 Q 4, 5
	Respiratory volumes - Spirometry		p 570 Q 8
13. 4/14-17	Urinary system	40	p 617 Q 2 p 618 Q 5, 6
	Reproductive systems; Meiosis	42	p 637 Q 1, 2 p 639 Q 12 p 640 Q 21, 23
14. 4/21-24	<b>Practical 4</b>		