COURSE BSC 2401.01. .02
COURSE SYLLABUS: Fall 2012

Instructor: Doyce Dees – Laboratory Coordinator, Adjunct Instructor
Office Location: STC 235
Office Hours: 8am – 5pm
Office Phone: 903-886-5375
Office Fax: 903-886-5997
University Email Address: doyce.dees@tamuc.edu

COURSE INFORMATION

Textbook: Hole's Human Anatomy and Physiology by Shier, Butler, Lewis 13th edition.
ISBN -10: 9780073378275
Ebook available at: http://www.coursesmart.com/
Lab manual: Human Anatomy & Physiology Laboratory Manual by Marieb and Mitchell Ninth edition Fetal Pig Version, 10th edition. ISBN-10: 9780321616135

Course Description: This course is the Study of the structure and function of human organ systems.

Student Learning Outcomes:

1. **Students will become familiar with the organs and general functions of 11 organ systems and how they work together to maintain homeostasis.**
2. **Students will learn fundamental chemical principles and basic chemistry of living systems.**
3. **Students will learn the detailed structure and function of the integumentary, skeletal, muscular and nervous systems**

COURSE REQUIREMENTS

Exams: Exams will consist of multiple choice questions and labeling diagrams. Exam material will come from both lecture and lab. Exams will not be made up unless the absence is excused as described in the Student Handbook.

Quizzes are 15 - 25 question tests over material covered in each chapter. The Nerve, Muscle, and Bone Tests are diagram labeling tests. Tests and quizzes will not be made up unless the absence is excused as described in the Student Handbook. All absences require specific documentation to be excused.

Lab requirement: You must attend lab to pass the course. The Lab Instructor will issue its own syllabus.

Course Evaluation:

Three exams	**- 30%**
Final comprehensive exam	**- 10%**
Nerve Test, Muscle Test, Bone Test	**- 10%**
Lab	**- 25%**
In class quizzes	**- 20%**
Discretion of the instructor	**- 5%**

The final exam is optional. If you are satisfied with your grade by the end of the semester you may opt out of taking the final. Taking the final will not hurt your overall grade. I will use your best three exam grades and double the best one in determining your final grade.

The tentative schedule of chapters:
Chapter 1- Introduction to Human Anatomy and Physiology
Chapter 2 – Chemical Basis of Life
Chapter 3 - Cells
Chapter 4 – Cellular Metabolism
Exam 1
Chapter 5 - Tissues
Chapter 6 – Integumentary System
Chapter 7 – Skeletal System – Skeleton Test
Chapter 8 – Joints of the Skeletal System
Exam 2
Chapter 9 – Muscular system – Muscle Test
Chapter 10 – Nervous system I
Chapter 11 – Nervous system II
Chapter 12 - Nervous system III - Nerve Test
Exam 3
The time and date for the final are YTD (Week of 10/12)

TECHNOLOGY REQUIREMENTS

Access to a computer is recommended.

COMMUNICATION AND SUPPORT

Interaction with Instructor Statement:

I can be found somewhere in the Science Building from 8am to at least 5pm Monday through Friday. I will stop what ever I am doing to help students.

UNIVERSITY PROCEDURES/POLICIES

University Specific Procedures:

Important Dates:

September 12 - Last day to Drop with 100% Refund and No Grade (while remaining enrolled

September 24 - Last Day for Refund for Withdrawals

November 1 - Last day to drop 16 wk course while still remaining enrolled (Q grade/No refund)

Students with Disabilities:

The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you have a disability requiring an accommodation, please contact:

Office of Student Disability Resources and Services
Texas A&M University-Commerce
Gee Library- Room 132
Phone (903) 886-5150 or (903) 886-5835
Fax (903) 468-8148
StudentDisabilityServices@tamu-commerce.edu

Student Conduct

All students enrolled at the University shall follow the tenets of common decency and acceptable behavior conducive to a positive learning environment. (See *Code of Student Conduct from Student Guide Handbook).*

Cell phones/pagers should be silent during class time; please be considerate of your fellow students. Cell phones used during tests or quizzes or exams will result in zeros for the test or quiz or exam and a whole lotta further administrative action.

Texas A&M University-Commerce does not tolerate plagiarism and other forms of academic dishonesty. Conduct that violates generally accepted standards of academic honesty is defined as academic dishonesty. "Academic dishonesty" includes, but is not limited to, plagiarism (the appropriation or stealing of the ideas or words of another and passing them off as one's own), cheating on exams or other course assignments, using electronic gadgets during a test, collusion (the unauthorized collaboration with others in preparing course assignments), and abuse (destruction, defacing, or removal) of resource material.

"Let the tutor not merely require a verbal account of what the boy has been taught but the meaning and the substance of it: let him judge how the child has profited from it not from the evidence of his memory but from that of his life. Let him take what the boy has just learned and make him show him dozens of different aspects of it and then apply it to just as many different subjects, in order to find out whether he has really grasped it and make it part of himself, judging the boy's progress by what Plato taught about education. Spewing up food exactly as you have swallowed it is evidence of a failure to digest and assimilate it; the stomach has not done its job if, during concoction, it fails to change the substance and the form of what it is given."
- Michel de Montaigne

Some Strategies for Passing A&P

I often am asked, "How should I study this material?" The ultimate answer is, "Every day." Anatomy and physiology isn't a hard class in the way that Calculus 3 or Physical Chemistry is hard. There are not a lot of formulae to use or calculations to make. It's a hard class because of the volume of material there is to learn. Furthermore, you have to be able to take the things you learn from the text and fit them together to answer questions on tests. This course is not like others you may be used to where you learn a set of test questions and memorize the answers then regurgitate it all as a test. You will have to **know** the material - really **know** the material. That means you can't study for a test ten minutes before you take it. You have to dedicate some time every day to study. That's the first rule to learning Human A&P. **You have to study every day**.

Read the text book. I use a PowerPoint presentation of material from the text book in lecture. I rarely deviate from the text. Any material that appears in my PowerPoints that is not found in the text will be found in handouts I will give you in class. If you read the text book the PowerPoint presentation should be familiar to you. If you don't read the text book you probably won't pass the class. One approach to taking notes is to write down an outline of the chapter on one half of a page in your notes as you read and include questions you have about the material on the other half. During lecture, when I get to the place where you have a question about the material, RAISE YOUR HAND AND ASK THE QUESTION. Do not be shy about asking questions about things you don't understand in the class. I guarantee someone else in the class has the same question. And if you don't understand something and you don't ask about it in class there's a good chance you won't understand it come test day. Don't let that happen.

Answer the questions I ask in class LOUDLY. When I lecture I often stop and ask a question about material that you should have encountered before class. Or I might drag out a sentence as a prompt for you to complete it for me. For instance, I might say, "The three major types of lipids are triglycerides, phospholipids and …." And, because you read the chapter the night before, you should shout, "STEROIDS!"

Make a vocabulary book. There are word root lists at the beginning of each chapter. Use these lists to understand words in the chapter you are not familiar with. As you read the chapter you will encounter **bolded** words. Use those words to build a vocabulary. Then, when discussing the material in class or in a study group, use that vocabulary rather than the vocabulary you use in every day conversation. The sooner you learn to speak the language of anatomy and physiology the better.

Charts and tables and illustrations are there for a reason. Don't ignore them. Charts and tables often summarize the text material and present it in an organized form. Study the charts

and tables and make sense of them. When they are confusing, write down a question about it in your notes and bring it up in class. The illustrations in the book are very good. Use them. Be able to reproduce them by heart.

Three words about drawing – draw a lot. Don't compare your drawing to art. It may or may not be art. The purpose of drawing is to learn the material. What matters is that you understand what you are drawing. When you can reproduce a drawing from the textbook without referring back to it it's a pretty good sign you've learned something that will be useful on a test.

Flash cards are a great learning tool. Make flash cards of your vocabulary words. Put the word on one side and the definition on the other. Make flash cards of whole concepts and flow charts. Make flash cards from the tables. Make flash cards from the feed back mechanisms. Make flash cards of the questions in the back of the chapters. This is a good way to mentally prepare for questions you might encounter on the test. **Don't let test time be the first time you encounter questions about the course material.**

Form study groups. A very effective way of studying after you have done some on your own is to get together in a group and compare notes. Play games with your flash cards. Sometimes others in your class have the same questions about the material that you do. Collaboration is a good way to formulate a way of asking a question in class. There is a room (244) next to your lab (228) that can be used as a study room and any time the lab is not in use you can use it for a study group. The Science building officially closes at 10PM.

Your text book is the most important tool you have for this class (beside your brain.) Use the first few pages of your text book to get some more ideas about how to study this material. Use the questions in the back of the chapter to study. Answer them in full and if you get stuck on a question or concept, bring it up in class. Don't get behind in A&P.

Use the lab and lab material. The models, slides, dissecting material and your lab manual are all useful for this course. Don't blow off lab. The lab classes will go something like this - after you are given a short introduction and quiz and a list of exercises to do you are turned loose in lab. The common temptation is to sneak out and blow off lab. This usually results in a lab grade in the single digits because come time for the practical, students that blow off lab do not know the material. The practical exams constitute the bulk of the lab grade. Don't bow off lab. Also, when the room (228) is not in use for classes, you may come in and use the lab for study. Across the hall from you lab is room 244. You are also welcome to use this room for study.
Use the internet. There are very good resources available to you electronically.

Gray's Anatomy (the text book, not the TV show. It's a different spelling too.)
http://www.bartleby.com/107/

Medical Dictionary - http://www.nlm.nih.gov/medlineplus/mplusdictionary.html

Your text book web site is at: http://highered.mcgraw-hill.com/sites/0073378275/information_center_view0/

Plan your week. You have other classes but of course none of them is as important as A&P. Still, you have to study for those classes as well. Students are expected to study about 2 to 3 hours per week outside class for each unit of class credit. Thus a student taking 15 credit hours should spend 30 to 45 hours each week studying outside of class. That means with the time you spend in class and the time you spend studying outside of class you should spend 45 to 60

hours a week doing school work for a 15 hour load. It's like a job that way.
You could divide your time up for A&P class like this:

Course hours	Reading text	Exercises, flash cards, online study, etc	Study group, extra lab time …	**Total time studying for A&P per week**
4	2 to 3 hrs	3 to 6 hrs	3 hrs	**8 to 12 hrs**

If you picked a number in between 8 and 12 say, 10, you could set aside 2 hours a day 5 days a week studying A&P. For some of your classes that amount of time is not necessary. Some of your classes may require more time every week. Two hours a day is good for A&P.

Tutoring: There is tutoring available from JAMP and the Access and Success people. The JAMP Room is room 110 in the Science Building. There are a few computers, lots of tables, a refrigerator, a microwave, a few models like you would see in lab, and tutors. The tutors are people who have had this class and did well. They can help you study and learn and strategize for tests. I encourage you to pack the JAMP Room so we have to find a bigger place for tutoring A&P.

Extra Credit: don't ask me for it. There are 100,000 things for you to learn already. You want to do extra things? In the past classes have made videos and put them on YouTube for a point or two on their final grade. If, as a class, you make a video, then I'll give you a point or two on your final grade. But it has to be the whole class and you have to OK it with me before you proceed.

Use the text book. You probably spent a lot of money on it, you really should use it. You simply can't pass the class without it. Many have tried; all have failed – really failed.
Each chapter begins with **Learning Outcomes** that give broad general goals for learning in the chapter. These items are a good place to start when testing your self on the material.
Understanding Words gives you roots, suffixes and prefixes you will encounter in the chapter. These apply to your vocabulary. The chapters also start with **Opening Vignettes** that introduce topics with contemporary reports. **Boxed information**, **From Science to Technology** and **Clinical Applications** all extend your knowledge of the chapter contents.
As we move through the text book you may or may not notice how the subject matter progresses so I'll give you a short preview here. The first few chapters are for establishing basic concepts and vocabulary. The text then moves on to histology and finally you proceed to learn the organ systems.

The concepts of levels of organization, homeostasis, feedback mechanisms, organ systems and basic definitions of anatomy and physiology are covered in **Chapter 1**. Body landmarks and regions and anatomical markers are also presented in this chapter. Get to know all these basic things.

Chapter 2 covers elementary chemistry and some organic chemistry concepts that are critical to understanding the structure and function of all living systems. Probably the hardest things to get down in this chapter are the four basic types of organic molecules you will encounter throughout the rest of the book. Pay special attention to those four basic types of organic molecules.

Chapter 3 introduces cell biology. The parts of a cell and their functions are relatively easy to learn. Movement of things in and out of cells is a bit more difficult. Pay special attention to diffusion and osmosis. Understand what the surface of a cell membrane really looks like. The cell cycle is also a fundamental concept introduced in this chapter. Understand that some cells in your body are constantly undergoing the cell cycle and others are not.
The metabolic processes that are introduced in **Chapter 4** are challenging. You have to understand those processes to make a good grade on the first exam. Use your resources and ask questions in class if you are having problems understanding glycolysis, the Krebs's cycle and oxidative phosphorylation. Also, pay attention to catabolic and anabolic reactions. Look for the synthesis and degradation of molecules made from the four basic organic molecules introduced in chapter 2.

These first four chapters will constitute the first Exam. To proceed to the next four chapters you have to understand the first four. Do not go into the exam unprepared. If you encounter problems with the material on the first day of class please seek help. Find a tutor, find me, and ask questions in class. Do not get behind. The exams will consist of 50 multiple choice questions and I will provide the Scantron.

Chapter Five is my favorite chapter. The study of tissues, **histology**, is my favorite thing in the world. Anatomy and physiology begin at the microscopic level, not the gross level. I can spend a whole day searching for interesting things in one section of tissue under a microscope. A plastic model of a liver would do you no good if you need a liver transplant. It might be shaped like a human liver and have many detailed features of a human liver but there's no functional cellular level to a plastic model of a human liver. Anatomy and physiology really begins at the tissue level of organization. You absolutely have to learn the four major tissue types and the various subtypes. You must learn the descriptions, functions and locations of all these types of tissue to make a good grade on the tests. There's no getting around it. At this point I'll add that by the time you get to Chapter Five you should have built up a sufficient vocabulary to converse like a real A&P student. You should eliminate the words, "things" and "stuff" from your academic discourse as much as possible and substitute terms from you A&P vocabulary.

Chapter Six introduces the first organ system – the integumentary system. As you learn about each organ system learn to distinguish the **parenchyma** and **stroma** of each organ. Learn the **innervation** and **vascularization** of each organ system. Learn the individual parts of the system and how they work. No organ system is isolated from the others and you will encounter organs that contribute to multiple organ systems. The end of the chapters will show how the organ system you just studied interacts with other systems. You will learn about the skin and skin accessory organs in this chapter. One type of cell found in the skin, the **Langerhans cell**, is derived from a type of white blood cell called a **monocyte**. You will encounter many types of cells derived from monocytes. Most of these derivatives of **monocytes** are collectively called **macrophages**. Macrophages are found in every organ system so get used to encountering them.

Chapter 7 covers the skeletal system. You will be expected to learn the names and parts of all the bones in the body. You will be tested over the names of all the bones. Prepare for this Bone Test. You will also learn about the interaction between two distinct cell types found in bone – **osteoblasts and osteoclasts** – derived from macrophages. Understanding these cells is critical to understanding the physiology of bone. Pay attention to the origin, growth and development of bone. You will be tested over these things as well.

Chapter 8 covers the joints that occur between bones. This chapter has a large vocabulary of words you may have never seen before. The chapter divides joints into three large categories

and several subcategories as well. Learn the description, movement and examples for each type of joint. We have models of several joints in the lab that you will encounter on the practical. These chapters will constitute the second exam.

Chapter 9 covers the muscular system. You will learn about three distinct muscle types but skeletal muscle will be the model for all muscle types. The anatomy of skeletal muscle is very details and requires your total attention. If you don't understand the microanatomy of skeletal muscle the physiology of muscle contraction will elude you and you will not do well when test time comes around. Excitation contraction coupling, sliding filament theory and cross bridge cycling (Section 9.3) will be the source of the bulk of questions on the exam material covering Chapter 9. You will also have a test on the names of the superficial skeletal muscles.
The nervous system is a topic so large that it requires three chapters to cover it. **Chapter 10** covers the basic structure and function of nervous tissue using a motor neuron as the main model. You will discover quite a lot of variation in neurons and supporting cells that make up nervous tissue. One of these cell types- **microglia**- are derived from … that's right, macrophages. The physiology of neural signaling is also covered in this chapter. This topic usually gives many students problems so be sure you understand it well before test time.

Chapter 11 covers the divisions of the nervous system and can be difficult for some students. The main difficulty is the volume of material spent on the central and peripheral nervous systems. You will have the cranial nerve test with this chapter. You will need to learn the names tracks and functions of many nerves in this chapter as well as the components of the brain. This is my second favorite chapter.

Finally, Chapter **12** covers the senses that arise from the nervous system. The book divides the senses into general and special senses. The physiology component in your text book is not as detailed as in other texts but there's plenty of material to learn. There is a lot of diversity in the histology of the senses as well. You should practice tracing the sequence of events both anatomically and physiologically from stimulation to perception for all five senses.
Chapters 9, 10, 11 and 12 will be on the third exam.

Exams will be in the form of multiple choice questions. (They may also include charts or diagrams that need labeling.) Multiple-choice questions can be considered to be a series of true/false questions packaged into a single question. These tests require you to select from four or five possible answers. A question might have answers like "all of the above," "none of the above," or "b and d are correct." Questions with this type of answer relate information from different parts of the course. They require students to apply as well as recognize and recall information. Read these types of questions and choices with particular care.
IF you have made satisfactory grades after the third exam you may elect not to take the **final**. I will double your best exam grade in calculating your final grade. If you do elect to take the final I will use your best three exam grades in calculating your final grade. The final exam will be comprehensive and material from all 12 chapters will be covered.