

BSC 228 - Human Physiology - Syllabus

Summer 2018 - Department of Biological Sciences - Marshall University

Professor: Dr. Brian L. Antonsen
Contact: Office: 326 Science Building Tel: 304-696-6496 E-mail: antonsenb@marshall.edu

Office Hours: Monday & Wednesday 12 noon – 1:00 PM, or by appointment.

*I make every effort to keep scheduled office hours. Please note that conflicts may arise that require my absence.

Textbook: **Vander's Human Physiology: The Mechanisms of Body Function 13th edition.**
Widmaier, Raff, and Strang, McGraw-Hill Higher Education Pub. (**required**)

Lab Manual: Materials to be handed out in the lab.

Classroom Clicker: Turning Technologies TurningPoint Response Card NXT or higher (**required**).

You must bring your ResponseCard to every class. If you do not, you will receive zero for that quiz or exam.

Computer Requirements: Access to and the ability to print documents from MUOnline is required. I use MUOnline to distribute slides from my lectures, study aids, additional material, and quizzes. Access to and ability to use Microsoft Office or an equivalent alternative, with printing capability, is required. I may also send course notices to your Marshall email account, you are expected to check it regularly. Any electronic course communication must be through the Marshall email system (not gmail, yahoo, MUOnline, etc).

Lecture/Lab: **MTWRF 8:00AM-noon in S376/S387.**

Responsibilities: By enrolling in this course, you agree to all policies in this syllabus, the Laboratory Syllabus Supplement, and all relevant University policies as outlined on the Academic Affairs website (www.marshall.edu/academic-affairs, click on "Marshall University Policies")

Course Description (Catalog): Basic concepts of human physiology, including an introduction to physiological control mechanisms operating at cellular, tissue, organ, and systems levels. Provides the scientific background for understanding pathophysiology. Open to candidates in BSN program. Does not count toward a major in Biological Science. 4 credit hours. PR: BSC 227 with grade of C or better.

Human physiology is the study of how our bodies function. This course will integrate with and build upon the foundation of knowledge you have developed in the prerequisite, Human Anatomy, and while we will do some superficial review in this course, I expect that you will have learned your anatomy well and that you remember it. This course emphasizes the basics of normal human physiology, with the notion that in order to understand various pathologies, one must first understand how the body works in its healthy state. However, we will use examples of pathological conditions to help demonstrate particular points.

General Learning Concepts and Study Hints:

I organize my lectures loosely around material presented in the textbook, but I do bring in additional material, I will emphasize different topics, and I will occasionally argue points with the textbook. I base exams on lecture material and assigned readings from the text, and EVERYTHING presented in lectures or reading assignments is examinable. Therefore, take notes! It is HIGHLY recommended that you download the slides for each lecture in advance, and go through the material before coming to class, then bring the handouts to class to aid taking notes. The handouts alone are not sufficient.

Most students consider Human Physiology to be far more difficult than Human Anatomy. Therefore, by preparing yourself in advance for the lectures, studying often, and using your textbook and asking questions in class to fill in gaps in your knowledge, you will place yourself in a far better position to succeed. Furthermore, attendance is critical, as material in this course builds upon itself and therefore it can be very easy to fall behind. Cramming and memorizing from lecture handouts just before an exam tends not to result in good exam scores.

Goals:

Most of the students who take this course are interested in some aspect of the health sciences. As such, I feel it is important for me to give you the opportunity to begin to develop those skills necessary for pursuing a career in these fields. Although a foundation of basic knowledge is essential, this class will go beyond presenting you with a series of facts. You will have to make decisions based on complex information; you will have to read new information and decide for yourself whether you think it is accurate; you will have to possess a basic knowledge of how scientific information is developed. As such, in this course we will strive to do the following:

1. to provide the material necessary for a thorough *understanding* of normal human physiology.
2. to provide the opportunity to develop your ability to integrate information and think about it critically, analytically, and conceptually.
3. to provide the opportunity to apply your knowledge towards designing, conducting, analyzing, and reporting on scientific experiments.
4. to provide the opportunity for you to study human physiology with an emphasis on your interests.

Expected Learning Outcomes:

I have expectations of you in terms of the knowledge and abilities you will develop in this course. We will go beyond simple memorization of facts, and ask that you **learn** the material. However, you are the one paying to take this course, you are the one who will be competing for placement in professional programs or jobs, and you are the one who knows where your interests lie. It is up to you to participate, to ask questions, to study, and to come to class prepared. In aid of this, I will open the floor at the beginning of each lecture to questions or comments, and I will ask questions of you.

Course student learning outcomes	How students will practice each outcome in this course	How student achievement of each outcome will be assessed in this course
Students will describe physiological processes at the level of biochemicals, cells, organs, systems, and organism.	Practice exams, quizzes, exercises from the textbook	Exam questions that assess remembering and understanding
Students will apply physiological concepts to novel situations.	Practice exams, quizzes, exercises from the textbook	Exam questions that assess ability to identify core ideas and use them to interpret a problem.
Students will integrate knowledge from different parts of the course and infer how the body as a whole functions.	Practice exams, quizzes, exercises from the textbook	Exam questions that assess ability to critically analyze and interpret information. Lab reports
Students will design experiments, analyze scientific data, draw conclusions based on integrating the data with other knowledge, and explain your conclusions.	Rough lab reports	Lab reports, in lab question sheets

Personal Conduct:

I will expect everyone in the labs and lectures to act in a professional and courteous manner. Disruptive, abusive, or offensive behavior directed at anyone involved in the class will not be tolerated, and offenders may be asked to leave the classroom and forfeit any associated grades. Cell phones and other communication devices should be turned off or set to silent ring. If you absolutely must answer a phone call, quietly leave the class before doing so. Text messaging is not allowed. Use of computers or personal electronic devices is not allowed, unless their use is directly involved with class activities **and** has been approved by myself and/or your lab TA. If you are late, enter quietly and avoid disturbing the class. Any disruptive behavior, including but not limited to talking, reading other material in class, texting, or cell phone use, will result in the offender being required to leave the class and forfeiture of any associated grades. Furthermore, I only respond to emails that are written with professionalism and courtesy.

Attendance:

I do not take attendance in lecture, but most in class quizzes are not announced in advance.

Missed exams or quizzes can be made up or waived only in the case of a University approved absence or a weather related closure. It is your responsibility to be familiar with University policy, which can be found in the academic catalog:

<http://www.marshall.edu/catalog/undergraduate-catalogs/>

In case of a university approved absence for an exam, you must contact me as soon as possible to arrange for a make up exam, and the exam must be taken on the FIRST DAY that you return to the university, unless I grant you further extension in writing. In case of absence for a sporting event or other University sanctioned activity, arrangements to make up the exam must be made BEFORE the day of the exam. Failure to follow any of these policies will result in you being considered absent without excuse for the exam. Any make up exam may be, at my discretion, completely long answer or oral format. Missed quizzes cannot be made up, but will be waived if the absence is excused.

In case of university closure on an exam day, the exam will be rescheduled to the next lecture session.

We DO take attendance in the labs. Due to high use of the laboratory space, we cannot set up lab exercises at times other than your scheduled period, and you are not permitted to attend a lab other than the one in which you are registered. Therefore, **if you miss a lab, you miss those points.** If you have a University approved absence, you may be permitted to obtain the lab data from your group members and complete the assignment. Missed lab quizzes cannot be made up, but they will not be counted if the absence is excused.

Academic Honesty:

Students found guilty of academic dishonesty may be placed on academic probation, suspended, or dismissed from the University.

I take honesty and integrity seriously, and will not tolerate any form of dishonest conduct. You are responsible for knowing the University's policies, which can be found in the student handbook or at these web addresses:

<http://www.marshall.edu/catalog/undergraduate-catalogs/> (search for dishonesty in the current catalog)

During exams, I will expect you to NOT look towards the work of those sitting around you, or have any form of course related material or electronic devices either on or in view. In the lab, most experiments will be done in groups, but we expect that all assignments will be written up independently. Exceptions to independent work will only be allowed in cases where you are expressly instructed to write up your assignment in groups. We also expect that all references used in your reports be properly cited. Any incidence of dishonest conduct will result in a grade of ZERO for that test, quiz, or assignment, a minimum of a one letter grade penalty, and possible failure or dismissal from the course. Every case will also be referred to Academic Affairs for further action.

An important note on plagiarism: Plagiarism is any use, whether intentional or not, of another person's words in your assignments. This includes the use of quotes to indicate borrowed words - **using quotes is not allowed in this class**. Pay particular attention to this last point - some fields and classes allow the use of quotes, and they are appropriate. In the sciences they are not appropriate, and therefore they are not allowed in this class. We are interested in how you express thoughts, not how well you can copy someone else's thoughts, with or without quotes. Your writing must be completely your own. Safeassign, a plagiarism detection tool, will be used in this class. Students taking this class must agree to submit their written work to Safeassign for review.

Social Justice:

Absolutely NO student will be discriminated against based on race, ethnicity, sex, age, sexual orientation, social class, health condition, or religion. Every student is an integral and essential member of this class, and their opinions and discussion will be treated with value and respect.

Students with Disabilities:

Marshall University is committed to equal opportunity in education for all students, including those with physical, learning and psychological disabilities. University policy states that it is the responsibility of students with disabilities to contact the Office of Disabled Student Services (DSS) in Prichard Hall 117, phone 304 696-2271 to provide documentation of their disability. Following this, the DSS Coordinator will send a letter to each of the student's instructors outlining the academic accommodation he/she will need to ensure equality in classroom experiences, outside assignment, testing and grading. The instructor and student will meet to discuss how the accommodation(s) requested will be provided. For more information, please visit <http://www.marshall.edu/disabled> or contact Disabled Student Services Office at Prichard Hall 11, phone 304-696-2271.

Assessment:

Written exams and quizzes are a necessary means of evaluating how well students have met my expectations, especially in large classes like BSC 228. The preliminary and final exams will be a mixture of multiple choice, fill in the blanks, matching, and true false. Questions will be written so as to test your preparation at every level, from memorization of facts to application of conceptual knowledge. I expect that you will always be prepared to answer questions in the lecture and laboratory, and with this in mind short unannounced quizzes will be given. These should benefit your final scores as they help you to develop good study skills by keeping up with the material.

Reports written in the laboratory will give you the opportunity to apply knowledge in a more practical situation. They will cover similar material as the lectures, and will and will emphasize your ability to integrate and express data, principles, and concepts.

Late assignments of any kind, be they lab reports, quizzes, or anything else, will not be accepted. This includes anything that must be handed in physically, as well as anything that must be completed online.

Grading Policy:

Your grade will be based on your scores on a number of short unscheduled quizzes in the lecture and/or over MUOnline, three preliminary lecture exams, the final lecture exam, and the reports and quizzes you will write in the laboratory. All exams are cumulative.

Quizzes:	15%
Preliminary Exam 1:	15%
Preliminary Exam 2:	15%
Lecture Final Exam:	30%
Laboratory:	<u>25%</u>
Total:	100%

I use this scale to determine final grades: 100 - 90 = A; 89 - 80 = B; 79 - 70 = C; 69 - 60 = D; <59 = F.
I round up if your score is X.5 to X.9.

Tentative Lecture Schedule*

Date	General Topic	Readings (Vander)
Week 1	Introduction to course, Body Organization, Homeostasis Chemical Composition of the Body The Cell, Reactions and Metabolism Transmembrane Transport	Chapter 1 Chapter 2 Chapter 3 Chapter 4
Week 2	Chemical Messengers: Signals and Receptor Systems Cells of the Nervous System, NS organization Bioelectricity, Membrane Potential and Synaptic Function Sensory Systems	Chapter 5 Chapter 6 Chapter 6 Chapter 7
Week 3-4	Muscle Muscular Control Endocrine Glands and Hormones Cardiovascular Physiology Respiratory System	Chapter 9 Chapter 10 Chapter 11 Chapter 12 Chapter 13
Week 4-5	Urinary System Kidneys and Fluid/Electrolyte Balance Gastrointestinal Physiology Regulation of Metabolism and Energy Balance Immune System (Time allowing) Reproductive Physiology (Time allowing)	Chapter 14 Chapter 15 Chapter 16 Chapter 18 Chapter 17

*-Subject to change – keep in mind that we may start specific topics earlier or later than outlined here, depending on how things progress through the term.

Exams:

PRELIMINARY EXAMINATION # 1: June 13

PRELIMINARY EXAMINATION # 2: June 26

FINAL EXAM: Friday, July 6, 9:00 AM - 11:00 AM in the lecture room.

Lecture: S376 (8AM - 12 noon)
Lab: S387 (times noted below)

June 2018				
Monday	Tuesday	Wednesday	Thursday	Friday
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4 Lecture	5 Lecture	6 Lecture	7 Lecture	8 Lab 1 Lab Safety Statistics
11 Lecture	12 Lecture	13 Exam 1 Lecture	14 Lab 2 Chem /Osmosis Rough draft of lab report#1 due	15 Lecture
18 Lecture	19 Lecture	20 Lecture	21 Lab 3 Skin temp / stress Skeletal Muscle Endocrine questions Final draft of lab report#1 due	22 Lecture Osmosis and chemistry question sheets due - all sections
25 Lecture	26 Exam 2 Lecture	27 Lecture	28 Lab 4 Blood pressure Experimental design Stress, skeletal muscle and endocrine question sheets due	29 Lab 5 ECG/spirometry Digestion questions Blood pressure question sheets and exp. design due

July 2018				
Monday	Tuesday	Wednesday	Thursday	Friday
2 Lecture	3 Lecture Lab report#2 and digestion sheet due	4 Independence Day	5 Lecture	6 Final Exam