

BSC 228 - Human Physiology - Syllabus

Spring 2018 - Department of Biological Sciences - Marshall University

Professor: Dr. Guo-Zhang Zhu

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Office Hours: Thursday 08:00 AM – 11:00 AM, or by appointment.

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

**The instructor reserves the right to modify and/or change the course syllabus with reasonable notification to the students.

Textbook: Vander's Human Physiology: The Mechanisms of Body Function 14th edition.
Widmaier, Raff, and Strang, McGraw-Hill Higher Education Pub. (required).

Clicker: Turning Technologies TurningPoint Response Card NXT or QT(required) (sold/rented at MU bookstore or online). You must bring your clicker to every class. Penalties for not having clicker: a score of zero on a quiz, 25% penalty on an exam.

Lab Manual: will be instructed by Teaching Assistant.

Lecture Meets Tuesday and Thursday 12:30pm-1:45pm in S376. All labs meet in S387.

Computer Requirements: Access to and the ability to print documents from MUOnline is required. I use MUOnline to distribute slides from my lectures, supplementary material or exercises, study aids, additional material you may find interesting, 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).

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 system 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 work. 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 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, and then bring the handouts to class to aid taking notes. The handouts alone are not sufficient. Take notes!

Most students consider Human Physiology to be far more difficult than Human Anatomy. I highly recommend that you set up study groups of 3-5 people. This will allow you to confirm your notes and to begin learning by discussing. In order for you to truly learn something, you must become conversant in that topic. By studying together, you will improve your test scores! This is because test taking is an active process. You must practice being active (talking and discussing) so that you maximize your test performance. Asking questions in class will fill in gaps in your knowledge and 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.

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 should be set to silent ring/vibrate. If you absolutely must answer a phone call, quietly leave the class before doing so. Text messaging is not allowed. 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:

Attendance to all lecture and laboratory sessions is mandatory. Your performance in this class depends upon your participation in the improvised discussions that will arise during lecture and lab times. While you will need to put in ~3 hours outside of class for each hour in class, this will not take the place of active classroom participation.

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 calendar or at these web addresses:

<http://www.marshall.edu/student-affairs/absence.htm>

<http://www.marshall.edu/ucomm/weather.html>

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. 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 either 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/academic-affairs/Student%20Resources/Academic%20Dishonesty%20Policy.pdf>

<http://www.marshall.edu/muonline/plagiarism.asp>

During exams, I expect you will 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, 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. 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 your own.

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 may be a mixture of multiple choice, fill in the blanks, matching, true-false and essay-type questions. 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 verbally and in writing during the lecture and laboratory, and with this in mind short unannounced written quizzes may be given. 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 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.

Quizzes:	05% Missed quizzes cannot be made up and will be scored as 0
Preliminary Exam 1:	15%
Preliminary Exam 2:	15%
Preliminary Exam 3:	15%
Lecture Final	25%
Laboratory:	25%
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 to the next whole digit if your score is X.5 to X.9.

GRADES and what they mean:

The following system of grades and quality points is used for this course:

A For achievement of distinction. Distinctive Exceptional work

B For competent and acceptable work. Above average work. Indicates motivation and desire to perform above the norm.

C For average performance. Work at the level expected of entry level college students

D For patently substandard work. Work considerably below the average expected of an entry level college student, including missing assignments and scores on assignments below the class averages.

F Failure, given for unsatisfactory work.

Copyright Notice

All materials used in this class (in any form, electronic, printed, or verbal), including, but not limited to, exams, quizzes, handouts, lectures, homework assignments, and all material on the university's learning management system (currently Blackboard) and its peripherals, are copyright protected works under US Code Title 17. (1) Unauthorized copying, distribution, recording, selling, or posting of any portion of class materials, in any form, in any way, is a violation of federal law; this specifically includes posting any portion of the class materials to the World Wide Web through the Internet, and/or via any other means of electronic communication. (2) Unauthorized sharing of class materials in any form, specifically including, but not limited to, uploading class materials to websites for the purpose of seeking/providing solutions or sharing those materials with current or future students is a violation of the Academic Dishonesty Policy set forth in Marshall University's Student Code of Conduct. 'Unauthorized' means without explicit permission from the instructor. Violation of (1) or (2) will result in all necessary disciplinary actions taken against the student.

Tentative Lecture Schedule (Subject to change if needed)

Date		Topic	Readings (Vander 14 th ed)
January	9	Introduction to course; Homeostasis: A Framework for Human Physiology	Chapter 1
	11	Homeostasis: A Framework for Human Physiology	Chapter 1
	16	Chemical Composition of the Body and Its Relation to Physiology	Chapter 2
	18	Cellular Structure, Proteins, and Metabolic Pathways	Chapter 3
	23	Cellular Structure, Proteins, and Metabolic Pathways	Chapter 3
	25	Cellular Structure, Proteins, and Metabolic Pathways	Chapter 3
	30	Movement of Molecules Across Cell Membranes	Chapter 4
February	1	Cell Signaling in Physiology	Chapter 5
	6	Exam 1 (Chapters 1-5)	
	8	Neuronal Signaling and the Structure of the Nervous System	Chapter 6
	13	Neuronal Signaling and the Structure of the Nervous System	Chapter 6
	15	Sensory Physiology	Chapter 7
	20	Muscle	Chapter 9
	23	Control of Body Movement	Chapter 10
	27	The Endocrine System	Chapter 11
March	1	The Endocrine System	Chapter 11
	6	Exam 2 (Chapters 6-7, 9-11)	
	8	Cardiovascular Physiology	Chapter 12
	13	Cardiovascular Physiology	Chapter 12
	15	Cardiovascular Physiology	Chapter 12
	20	No class---Spring Break	
	22	No class---Spring Break	
	27	Respiratory Physiology	Chapter 13
	29	Respiratory Physiology	Chapter 13
April	3	The Kidneys and Regulation of Water and Inorganic Ions	Chapter 14
	5	The Kidneys and Regulation of Water and Inorganic Ions	Chapter 14
	10	The Digestion and Absorption of Food	Chapter 15
	12	The Digestion and Absorption of Food	Chapter 15
	17	Exam 3 (Chapters 12-15)	
	19	Regulation of Organic Metabolism and Energy Balance	Chapter 16
	24	Reproduction	Chapter 17
	26	The Immune System	Chapter 18
May	1	FINAL COMPREHENSIVE (all lectures) 12:45pm to 2:45pm in the lecture room	Final