BSC 228 - Human Physiology - Syllabus
Spring 2013 - Department of Biological Sciences - Marshall University

Instructor: **Dr. Nadja Spitzer**

Contact: 315 Science Building (inside S-311A)
Telephone: 304-696-7147 e-mail: spitzern@marshall.edu

Office Hours: **Tuesday & Thursday 8:30 am – 10:30 am, or by appointment.**
*I make every effort to keep scheduled office hours. Please note that conflicts requiring my absence may arise.

By enrolling in this course, you agree to the policies listed in this syllabus. Please read the full text of each University Policy by going to http://www.marshall.edu/wpmu/academic-affairs/?page_id=802 **.**

Textbook: **Human Physiology: From Cells to Systems 8th edition.**
Sherwood, Brooks/Cole Cengage Learning **(required)**
NOTE: online materials associated with the textbook (CourseMate) are not required

Lab Manual: **Biopac users manual, and materials to be handed out in the lab. (required)**

Classroom Clicker: Turning Technologies Response Card RF **(required)**.

Other Materials: I use MUOnLine to distribute slides from my lectures, supplementary material or exercises, study aids, additional material you may find interesting, and quizzes. I do not post lecture notes or study guides.

Computer Requirements: Access to and the ability to print documents from MUOnLine is required. Access to Microsoft Office or an equivalent alternative, with printing capability, is required. I may send messages 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). Please do not email me through MUOnLine; always use the address above. In most cases, I will reply to messages within 2 business days. If you enter into an email conversation with me, I expect you to check for answers and reply promptly.

Lecture: **Tuesday 5:30 pm – 8:20 pm in S-374.**

Laboratory: **All Labs in S 387** **Section 210: Wednesday 5:30 – 8:20 pm**
Section 211: Thursday 5:30 – 8:20 pm

Course Description:

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.
Prerequisite: 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. While we will do some superficial review in this course, I expect that you will have learned 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 normal, healthy state. However, we will use examples of pathological conditions to help demonstrate particular points.

General Learning Concepts:

I organize my lectures around textbook material, but I do bring in additional ideas and I will emphasize different topics. everything presented in lectures is examinable. The textbook readings are intended to help you learn material presented in the lectures, by presenting it in a different and often more comprehensive format. Specific readings from the textbook will also be examinable; these will be outlined in lecture. It is highly recommended that you download the slides for each lecture in advance, and go through the material before coming to class. You will be required to take notes in this class, and having the slide printouts with you will greatly simplify this task.

Most students consider Human Physiology to be far more difficult than Human Anatomy. Therefore, by preparing yourself in advance for the lectures, you will place yourself in a much 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.

Study Habits:

This course will cover a great deal of material, and the exams will be comprehensive both in the scope of material covered and in the ways in which you will be asked to demonstrate how well you have learned the material. Many of you may find this somewhat difficult, as cramming and memorizing from lecture handouts just before an exam tends not to result in good exam scores. You will want to develop good study habits. Among these are coming to class prepared, and taking good notes. Study often; it is best to review material at least weekly, and to rewrite your notes. Ask questions in class. Use the textbook to help fill in gaps in your understanding.

Find study habits that work for you. There are a few general rules (avoid distractions and stress, don't leave it to the last second), but aside from this different people respond very differently to different environments. Use this web page to read about different learning styles, and take the quiz to find out which ones might work best: http://www.learning-styles-online.com/overview/

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. I anticipate that as the course progresses, you will develop and refine the ability to:

1. describe physiological processes at the level of cells, organs, systems, and organism.
2. apply physiological concepts to novel situations.
3. infer how the body as a whole functions based on knowledge from different parts of the course.
4. perform well-designed experiments.
5. write scientific reports.
6. form conclusions based on critical evaluation of information and data.

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 the lectures. We will, however, have many unannounced quizzes through the term that will count towards your final grade.

Missed exams or quizzes can be made up 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 this web address: http://www.marshall.edu/academic-affairs/?page_id=802

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 your approval expires. 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 not be counted 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 laboratories. Due to high use of the laboratory space, we cannot set up lab exercises at times other than your scheduled period. 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. You must **contact Dr. Spitzer, not your TA,** immediately after missing a lab to request an excused absence.

Classroom Clicker: You are responsible for ensuring that your clicker is in working order, and that you have it in class at all times. Failure to abide by these rules will not constitute an excused absence.

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 this web address: http://www.marshall.edu/academic-affairs/?page_id=802

During exams, I will expect you to NOT look at 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 can express thoughts, not how well you can copy someone else's thoughts.

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 117, 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, true false, and short and long answer. 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. In addition, quizzes will be given at MUOnLine throughout the semester. These should benefit your final scores as they help you to develop good study skills by keeping up with the material in the lecture and laboratory.

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 facts, principles, and concepts. Laboratory reports will be submitted electronically at MUOnLine. In your first laboratory session, you will receive a detailed grading rubric for lab reports in addition to instructions about how to write these reports. The final laboratory grade is calculated based on lab reports, assignments and quizzes; this is detailed in a separate lab syllabus that you will receive during your first session.

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. All lecture grades will be available at MUOnLine throughout the term, laboratory assignments will be returned in class. Information about calculating course grades using this information is posted at MUOnLine. The final grade for the course is calculated as follows:

Lecture & Online Quizzes:	15%
Preliminary Exam 1:	10%
Preliminary Exam 2:	10%
Preliminary Exam 3:	10%
Lecture Final:	30%
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 if your score is X.5 to X.9. I do not give bonus points or extra credit.

Calculating grades requires basic algebra that you should be able to do, considering the prerequisites for this course. I will not calculate grades for you throughout the semester. If you need a refresher, some examples are posted at MUOnLine. There are also plenty of resources available online to help you with this skill.

Tentative Lecture Schedule*

DATE	Online Quiz Due 4:00PM	General Topic	Readings
15-Jan		**1.** Introduction to Course, Basic Body organization	Ch 1; p1-7
		2. Homeostasis and Feedback Control	Ch 1; p7-20
	Q1 22-Jan		
22-Jan		**3.** Proteins and Chemical Reactions	Ch 2; Appendix
		4. Cellular Metabolism	Ch 2
	Q2 29-Jan		
29-Jan		**5.** Plasma Membrane and Membrane Potential	Ch 2 & 3
		6. Principles of Neural and Hormonal Communication I	Ch 4, p116-130
	Q3 5-Feb		
5-Feb		**7.** Principles of Neural and Hormonal Communication II	Ch 4, p89-115
		8. The Central Nervous System	Ch 5
	Q4 12-Feb		
12-Feb		**PRELIMINARY EXAMINATION 1**	
		9. The Peripheral Nervous System: Afferent Division	Ch 6
	Q5 19-Feb		
19-Feb		**10.** The Peripheral Nervous System: Efferent Division	Ch 7
		11. Muscle Physiology I	Ch 8; p258-284
	Q6 26-Feb		
26-Feb		**12.** Muscle Physiology II	Ch 8; 285-300
		13. Cardiac Physiology	Ch 9
	Q7 5-Mar		
5-Mar		**14.** Blood Vessels and Blood Pressure	Ch 10
		15. Blood	Ch 11
	Q8 12-Mar		
12-Mar		**PRELIMINARY EXAMINATION 2**	
19-Mar		Spring Break (no class)	
26-Mar		**16.** Body Defenses	Ch 12
		17. Respiratory System	Ch 13
	Q9 2-Apr		
2-Apr		**18.** Respiratory System	Ch 13
		19. Urinary System	Ch 14
	Q10 9-Apr		
9-Apr		**20.** Fluid and Acid-Base Balance	Ch 15
		21. Digestive System	Ch 16
	Q11 16-Apr		
16-Apr		**PRELIMINARY EXAMINATION 3**	
23-Apr		**22.** Digestive System	Ch 16
		23. Energy Balance and Temperature Regulation	Ch 17
	Q12 30-Apr		
30-Apr		**24.** Endocrinology	Ch 18 & 19
		25. Reproductive System	Ch 20

***-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.**

FINAL EXAM: Tuesday, May 7, 5:30-7:30pm in S-374.

Wednesday, April 3 is Assessment Day. The hours of 8:00 – 4:00 are set aside for university assessment activities. All seniors graduating in May, summer, or December of 2013 should be present from 10:00 – 11:30 to complete a senior assessment. A free lunch on the MSC Plaza will follow immediately afterward. Students other than graduating seniors should check with their departments for Assessment Day schedules.