

Biology 252- Anatomy and Physiology II

Syllabus, Summer 2015 (Tu,Th 9am – 12.10 pm)

Biological Sciences 120

General Information:

This is the second semester of a two-semester lecture course covering the structure and function of the human body. This course is designed for students whose curriculum requires a sequential two-semester science learning program, which provides an in-depth study of the anatomy and physiology of the human body systems.

Overall Course Objectives

Upon completion of this course, the student will be able to:

1. Define hormone, identify chemical classes of hormones, discuss the regulation of hormones and discuss the cellular mechanisms that hormones use to affect target organs of the body.
2. Identify the major endocrine glands, the hormones they secrete, and discuss the effect of these hormones in the body.
3. Discuss the functions of blood, and describe its composition and physical characteristics.
4. Discuss the mechanisms used to accomplish hemostasis.
5. Describe the ABO and Rh blood groups and apply these concepts to clinical situations.
6. Discuss the function, location and anatomy of the heart and its blood supply.
7. Discuss the structural and functional properties of cardiac muscle and describe the events of cardiac muscle cell contraction.
8. Discuss the conduction system of the heart, identify the basic elements of an electrocardiogram and their significance, and discuss selected arrhythmias.
9. Describe the timing and events of the cardiac cycle.
10. Define cardiac output, stroke volume and resistance and explain the various factors that are involved in their regulation.
11. Discuss the histology of elastic arteries, muscular arteries, arterioles, capillaries, venules and veins, and discuss their functions.
12. Identify the major arteries and veins of systemic circulation, pulmonary circulation, hepatic portal circulation, and fetal circulation.
13. Define blood flow, blood pressure, mean arterial pressure, resistance, systolic pressure, diastolic pressure and pulse pressure, and explain the relationship between them.
14. Discuss the regulation of mean arterial pressure and blood flow and identify factors that affect them.
15. Outline the factors involved in capillary dynamics, explain the clinical significance of each and apply them to clinical situations.
16. Discuss the functions of the lymphatic system and the structures that comprise it.
17. Discuss the non-specific defenses of the body, including inflammation and the complement system.
18. Discuss specific resistance, including the development of B cells, T cells and macrophages and the mechanism of humoral and cell mediated immune responses.
19. Discuss the functions of the respiratory system, the gross anatomy and histology of the structures that comprise it and their functions.

20. Discuss the mechanism used to accomplish ventilation, external and internal respiration and the transport of gases by the blood and discuss the regulation of these processes and the factors that affect them.
21. Identify the functions of the urinary system, discuss the gross anatomy and histology of the structures that comprise it and their functions.
22. Discuss the composition of urine and describe the mechanism used for its production.
23. Discuss the location, function and regulation of water, sodium, potassium, chlorine, magnesium and calcium in body fluids.
24. Discuss the role of buffers, the respiratory system and the kidneys in the regulation of acid base balance in the body and distinguish between acidosis and alkalosis.
25. Discuss the functions of the digestive system, the gross anatomy and histology of the structures that comprise it and their functions.
26. Discuss how digestive processes are regulated hormonally and neurally.
27. Describe the mechanical and chemical digestion of lipids, carbohydrates and proteins and their absorption.
28. Discuss the functions of the reproductive system, the gross anatomy and histology of the structures that comprise male and female reproductive systems and their functions.
29. Discuss spermatogenesis, oogenesis, the ovarian cycle, and the uterine cycle and their regulation.

Instructor Information:

Your instructor: Jennifer Hughes PhD

Office location: Room 468 in Biological Sciences Bldg.

Office phone number: 410-455-2876

Email: jhughes@umbc.edu (*Make sure you are emailing the right person-look for my picture*)

Office Hours: Mon & Wed 12 noon to 1 pm* in BS 468

Or by appointment (Email me for an appointment)

**Office hours may change during the semester as other commitments arise*

Required/Recommended Materials:

- **Textbook: Human Anatomy and Physiology**
Elaine Marieb and Katja Hoehn, 9th edition

Blackboard:

Lecture PowerPoints and other course information will be posted on Blackboard. It is your responsibility to check blackboard regularly for course announcements and information. Make sure your UMBC email is working and check it frequently. The PowerPoint slides posted on Blackboard will provide an **outline** of the material to be covered in class. Printing out and reading lecture notes *before* class will be helpful, however, it will **NOT** substitute for being present in class and taking notes!

Tentative Schedule for Biology 252, Summer 2015

<u>Day</u>	<u>Date</u>	<u>Lecture</u>	<u>Exams</u>	<u>Points</u>
Tues	Jul 7th	Autonomic nervous system (Ch 14)		
		Endocrine system (Ch 16)		
Thurs	Jul 9th	Blood (Ch 17)		
Tues	Jul 14th	Heart anatomy & Physiology (Ch 18)		
Thurs	Jul 16th	Exam on Unit 1 (Ch 14, 16, 17 and 18)	Exam 1	100
		Followed by Blood vessels (Ch 19)		
Tues	Jul 21st	Blood vessels (Ch 19) & Lymphatic system (Ch 20)		
Thurs	Jul 23rd	Immune System (Ch 21)		
Tues	Jul 28th	Respiratory System (Ch 22)		
Thurs	Jul 30th	Exam on Unit 2 (Ch 19, 20, 21, 22)	Exam 2	100
		Followed by Digestive system (Ch 23)		
Tues	Aug 4th	Digestive System & Nutrition & metabolism (Ch 24)		
Thurs	Aug 6th	Urinary system (Ch 25)		
		Fluid, Electrolyte and acid base (Ch 26)		
Tues	Aug 11th	Reproductive system (Ch 27)		
Thurs	Aug 13th	Final Exam: Cumulative 10 am-12 pm	200 point cumulative final	200
		100 points Qs on Ch 23, 24, 25, 26, 27	Total	400
		100 points Cumulative Qs		

Topic dates are tentative, but **EXAM DATES ARE FIXED**. The dates for exams will **NOT** change.

Other important dates

Last day to withdraw without a grade of "W":

July 9th

Last day to withdraw with a grade of "W":

August 4th

Last day to switch from Regular Grade to Audit:

August 4th

Grading:

- Final grades are based on the following:
 - Two unit exams 200
 - Unit 3 & Cumulative final exam 200
 - 400 pts**

NO EXAM IS EVER DROPPED

- NOTE: There are **NO EXTRA CREDIT** assignments in this course.
- Grading scheme:
 - To get an A, you need 90 % or above (360 or more points out of 400)
 - To get a B, you need 80 % or above (320 or more points out of 400)
 - To get a C, you need 70 % or above (280 or more points out of 400)
 - To get a D, you need 60% or above (240 or more points out of 400)
 - Anything below 60% (240 points) is considered an F and a failure of the course.

Doing well in the course

- Each exam will consist of objective type questions (multiple choice and True/False) on a Scantron form. Most of the questions will be derived from the class presentations and study guides although questions may also come from the assigned readings. You are also supposed to be able to **apply** the knowledge you learn so at least 10% of questions will be application questions to see if you can understand and apply the information in a new setting. In other words, memorizing the study guide won't prepare you for those questions.
- You are more likely to be highly successful in this class if you prepare for class by reading the textbook, **attend every class** and actively participate in class activities. Remember missing 1 class in summer is like missing a whole week in regular semester.
- Review after class, paying particular attention to concepts you find difficult. A good guideline is to do 3 hours work outside class for every hour spent in class. Many students find that forming study groups is a great help. Do not wait until the night before an exam to study, keep up with the material all along.
- This course has a lot of content. Therefore several objectives of the course may be presented as videos online. The content in the online videos will also be on the exam so make sure you watch any videos that are posted online.
- Please let me know if you are having problems with class material as soon as the problem is felt. Don't wait till the end of the semester to address your difficulties. Please take advantage of my office hours and come with questions or to ask for further explanations. You can also email me your questions or post them on the Discussion Board on Blackboard where I, the TA's and the other students in the class can answer them. Open lab times are posted on the lab door (Biological Science 005). You can come and ask questions about lecture content during open lab times even if you are not registered in Biol 252 L. The teaching assistants (listed next page) are also qualified to help you with lecture content during open lab.

Lecture Exams & Make Up Policy:

- Over the course of the semester, three lecture exams will be administered. These exams have already been scheduled to take place during regular class time and are required to be taken on the date and time specified in the syllabus. **Check your calendar NOW** and clear it to avoid conflict later!
- If an exam is missed **due to a documented medical emergency** (i.e. you must provide verifiable documentation from a physician or hospital that is signed and dated), a make-up exam may be given. All makeup exams are to be completed within a week of the missed exam. Make up exams are **100% short answer and essay**. There are **NO multiple choice questions** on make-up exams.

Attendance:

- Throughout the semester, I will track your attendance. There will be a sign in sheet in lecture every day. It is **your responsibility** to make sure you sign in every day.
- Attendance may be used to help determine the final grade if a student is **within** 1 % of a higher letter grade.

Policy on Academic Misconduct:

- “By enrolling in this course, each student assumes the responsibilities of an active participant in UMBC’s scholarly community in which everyone’s academic work and behavior are held to the highest standards of honesty. Cheating, fabrication, plagiarism, and helping others to commit these acts are all forms of academic dishonesty, and they are wrong. Academic misconduct could result in disciplinary action that may include, but is not limited to, suspension or dismissal.”
 - ***Cheating:*** Intentionally using or attempting to use unauthorized materials, information or study aids in any academic exercise which includes all forms of work submitted for credit.
 - ***Fabrication:*** Intentional or unauthorized falsification or invention of any information or citation in an academic exercise.
 - ***Plagiarism:*** The deliberate adoption or reproduction of ideas or words or statements of another person(s) as one's own, without acknowledgment.
 - ***Facilitating Others Academic Dishonesty:*** Intentionally or knowingly helping or attempting to help another to violate any provision of the institutional policy on academic dishonesty.
- Any evidence of cheating will be dealt with firmly under the Policy for Resolving Cases of Academic Misconduct. To read the full Student Academic Conduct Policy, consult the UMBC Student Handbook or read this PDF document:
http://www.umbc.edu/undergrad_ed/ai/documents/ACC2011.pdf
- If you are observed cheating during an examination, your answer sheet will be confiscated and you will receive a score of zero for the exam. Furthermore, the Chair of the Academic Misconduct Committee will be consulted regarding appropriate penalties including, but not limited to, a grade of “F” in the course. This policy applies to all activities in the course.
- Having a cellphone out during an exam is considered cheating. Cell phones must be silenced and kept in your bag during exams.

Students with disabilities:

UMBC is committed to eliminating discriminatory obstacles that may disadvantage students based on disability. If you have a disability and want to request accommodations, contact Student Support Services (SSS). If you are eligible for accommodations for this class, make an appointment to meet with me to discuss your SSS-approved accommodations so I can make sure you have what you need to be successful in the class.

Classroom Behavior:

- Leaving the classroom during lectures is distracting to both students and instructor. Please take care of personal needs before entering the classroom. We will have a 10 minute bathroom break after each 40-50 minutes of class time.
- Please refrain from talking (**NOT INCLUDING QUESTIONS**) during formal presentation, either by the instructor or by another student.
- You are welcome to ask questions during class - that is a wonderful way to clarify information and make new connections.
- Cellphones must be set to silent during class. You may NOT have your cellphone out during class. Cellphones must be stored in your backpack or bag during exams. If you have a cellphone out during an exam, it will be considered cheating and you will receive a “0” on the exam.

College Closing:

- If the college is closed due to hurricane or any other reason, the material that was to be covered during the class will be covered the next class on in an online lecture. If an exam is scheduled on that day, that exam will be given the next time the class meets.
- Sign up for UMBC alerts to stay informed with what is going on here on campus.
 - Go to <http://my.umbc.edu/go/alerts>
 - Click the link labeled **Manage e2Campus alerts**
 - Click the word **Services** on the orange toolbar
 - Enter the telephone number you want to receive alerts on your mobile phone AND/OR Enter the email address you want to receive alerts
 - Click the **Add SMS AND/OR Add Email** button

Please detach this last page, sign and complete it and turn it in to your instructor before Thursday July 9th at 12.10 pm. You can turn it in to the instructor at the start or end of classes.

**UMBC SUMMER 2015
BIOLOGY 252**

I _____
(PRINT YOUR NAME)

I have read and I understand the syllabus and course policies. I agree to follow the policies and procedure of this course as outlined in the syllabus provided by Jennifer Hughes.

SIGNATURE: _____ COURSE BIOL 252

DATE: _____

GOAL/MAJOR (e.g., Nursing, PA, EMT, etc)

LIST SCIENCE COURSES ALREADY TAKEN (AT UMBC OR TRANSFERRED FROM THE OTHER INSTITUTIONS): LIST ALL BIOLOGY, CHEMISTRY AND MATH CLASSES)