

## BIO 253 – Human Anatomy and Physiology I - Fall 2017

**Course Description:** This is the first course of a 2-semester course sequence in which students study the anatomy and physiology of the human body. The course includes introductions to basic chemistry, biology, and histology, and extends to the survey of the integumentary, skeletal, muscular and nervous systems. This course includes a laboratory component in which students are responsible for performing dissections and making original observations on dissected material. The laboratory experience culminates with the use of a plastinated human specimen for observation. A strong background in biology and/or chemistry is highly recommended. **Prerequisites: ENG 085 and MAT 020.**

**Instructor:** **Dr. Patricia Visser**  
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**Office Hours:** Mon. & Wed. 9:30-10 & 1-2:00 (Hillsdale)  
 (Central campus - by appointment only)  
 Tues. 12 -1 & 2:30 -4:30 (Central)

### Texts and Materials:

**Text:** PRINCIPLES OF ANATOMY AND PHYSIOLOGY, Tortora & Derrickson; 15th ed., Wiley **Several e-text & print options are available and include the WileyPLUS study site.** (A free A&P text is at [www.openstax.com](http://www.openstax.com); however, it is missing important information for the end of this course and the beginning of BIO 254.)

**Required:** Anatomy and Physiology I Lab Manual, Bradford & Visser – (JCC-printed packet)

**Recommended:** Course Outline packet, Dr. Visser’s edition – (JCC-printed packet)

**Grades:** The grade you earn in this course will be based upon total points accumulated on:

1) Daily Quizzes (4 pts. each x 25) (The lowest 10 scores will be dropped)	60	<b>Grading scale:</b> 4.0 (A) 95-100% 3.5 (A-/B+) 90-94% 3.0 (B) 85-89% 2.5 (B-/C+) 80-84% 2.0 (C) 75-79% 1.5 (C-/D+) 70-74% 1.0 (D) 65-69% 0.5 (D-) 60-64% 0 (F) <60%
2) Class Exams (100 pts. each x 4)	400	
3) Lab Practicals (25-100 pts. each x 3)	225	
4) “External Brain” assignments	50	
5) Lab Participation (25 pts.)	25	
6) Pre-test assignments (5 pts. each)	<u>20</u>	
<b>Total:</b>	<b>780 (approx.)</b>	
<i>(Grade spreadsheets are posted on JetNet; you are responsible for keeping track of your progress in the class and letting me know of any errors.)</i>		

**Absence Policy:** You are responsible for all assignments, handouts and materials covered in lecture and lab. Make-up opportunities for the exams and/or practicals are extended only in the case of emergencies, funerals or hospitalization and require written verification. **Second and subsequent make up exams will be awarded at 80% of the achieved score.** Practicals may not be made up unless you can take it with another lab section, otherwise you may either take a zero for the score or take an incomplete for the course and make it up next semester. Pop quizzes and in-class work cannot be made up. Non-attendance without instructor notification will result in your being dropped from the class. If you reach the end of semester and cannot complete the class – for extenuating reasons – you may be eligible for an incomplete. (Already earned scores carry over; only the missed work is eligible to be completed during the following semester.)

**General Philosophy:** You are an adult and a college student. As such you are expected to be able to work and learn independently and to be responsible for all assignments and materials. This is a difficult course, and will cover a tremendous amount of material; it will require hard work and discipline. You will need to keep up as the pace of the class is fast. There are no quick, easy ways to succeed. What you learn in this class will be directly proportional to the amount of effort you expend. It is expected you will need to spend at least 2 hours/week studying outside of class for every hour you are in class and lab (therefore 12 hours/week).

**You are expected to be considerate of the rights of others and not to interfere with those who are trying to study, work and learn.** You may feel that you paid for this class so you have the right to do whatever you want, but your classmates paid for it too, and they have the right to not have their learning disrupted by your rude behavior. Cell phones must be on silent mode (if on at all!) and **any non-class related use of phones or other electronics during class time risks having the item confiscated.**

**Miscellaneous:**

- No materials will be used during exams except those provided by the instructor (other than a #2 pencil). No electronic devices of any kind are allowed during examinations (except for documented ADA use).
- An exam score adjustment may be used for each exam. The curve is a privilege.
- **There will be no extra credit projects for this course.** Your time will be much better spent studying the assigned materials from Day 1.
- Supplemental materials will be available online and for checkout in the Learning Resource Center (WA) or Center for Student Success (BW). Links to WileyPLUS and other study sites are provided on JetNet.
- Tutors and additional free services for academic success (writing, study skills, test anxiety, math and reading, etc.) can be accessed by calling (517) 796-8415 or by stopping by the Center for Student Success. Students with documented disabilities should contact the Center for Student Success as soon as possible to ensure that appropriate accommodations are implemented in a timely fashion.
- A student found cheating or plagiarizing will receive a score of 0 on that exam or assignment and may receive a grade of 0 in the course. The Academic Deans will also be informed of the incident. The Academic Honesty Policy can be found at <https://www.jccmi.edu/wp-content/uploads/1004.pdf>.
- An iClicker response system may be used in this course. Clickers will be assigned to each student by the instructor. Your assigned clicker must be returned to the instructor at the end of each class session in order to receive your grade. Replacement of lost or damaged clickers is the students' responsibility.

**LABORATORY PROCEDURE:** Lab is a very important learning component of this course and has its own content. If you will not be able to attend a lab session, please make plans to attend another session that week if at all possible. Please observe the following items and encourage your lab group to do the same.

- Specific instructions will be given at the beginning of each lab period. You will be expected to complete all the assignments that require dissection or lab apparatus during this time.
- Any information covered in lab is "fair game" for both lab practicals and class exams. Lab practicals will, however, be limited to identification of materials as listed on the practical study guides.
- The lab period is a time of active learning involving study of various materials, interactive projects, short lecture-style presentations and other activities to enhance class success. Interaction with, and learning from, other members of the class (as well as the instructor) will be a critical part of the lab environment. While group work is important, make certain that you fully understand all material yourself since you will individually be held accountable for all information on the tests.
- While group activities and study are a required part of the lab, disruptive behavior and loud conversations will not be permitted. And speaking of disruptive, appropriate clothing should be worn to lab. Low-cut tops and pants are not only unprofessional, they guarantee that your classmates will be studying a lot more "anatomy" than what is in the lesson plan for the day.
- 25 points of your final grade will be based on your participation in various activities during lab. Any lab missed or not worked on conscientiously will result in a loss of 3 points per lab session. You will be expected to thoughtfully respond to each lab session's activities.
- You will be expected to return all materials and reference books to their proper place at the end of the lab period. Please leave materials neatly arranged; all members of each group will be held responsible for the condition and return of all lab materials.

- **Use of the human cadaver** mandates a requirement to sign the **LEARNING CONTRACT** prior to participation of any kind. This contract will require reading and acceptance of: the Human Specimen Respect Policy and the “Anatomy and Physiology Lab Rules”. Lab Rules follow. [BIO 253 students will not be dissecting nor working extensively with the human specimen; however, Instructor demonstration of the specimen will be part of the course.]

### **Learning Outcomes**

By the end of the semester, students will demonstrate – through both factual lecture exams and laboratory practical identification – their understanding of the following topics (with focus on the human body):

1. Anatomical terminology
2. Levels of organization in organisms
3. Homeostasis and feedback loops
4. General chemistry and biochemistry basics
5. Structure and function of biological membranes
6. Cell structure and function
7. Transcription, translation and the cell cycle
8. Structure and function of major body tissues (histology)
9. Structure and function of the skin and related integumentary system structures
10. Formation and homeostasis of the major types of bone
11. Bones and major bony structures of the human skeleton
12. Types, and structures, of articulations and movements performed by each
13. Structure of skeletal muscles and mechanisms of muscle contraction
14. identification of the movement(s) generated by contraction of specific muscles
15. Interaction between muscles, tendons, ligaments and bones in generating movement
16. Control of action potential generation in neurons
17. Role of neuroglia in nervous system structure and function
18. Structure and function of the divisions and components of the human nervous system
19. Interaction of various brain regions in maintaining life and regulating interaction with the world
20. Development, growth and repair processes in skin, bone, muscle and nervous tissue.

### **General Education Outcomes (GEOs) for BIO 253**

The Board of Trustees has determined that all JCC graduates should develop or enhance certain essential skills while enrolled in the college. The General Education Outcome for Bio 253 GEO 4 (Scientific Reasoning – assessed by performance on tests, quizzes and assignments). It also has components that contribute to the “Working Productively with Others” Essential Competency (EC) aspect of JC’s General Education program.

# BIO 253: HUMAN ANATOMY & PHYSIOLOGY I SCHEDULE – Fall 2017

Dates are subject to change due to unforeseen circumstances.

<u>DATE</u>	<u>READING &amp; EXAM SCHEDULE</u>	<u>LAB ACTIVITIES</u>
9/ 6	Chapter 1 – Introduction to Anat. & Phys.	<i>Introduction</i>
9/11	Finish Ch. 1; Chapter 4 – Histology	Exercise 1
9/13	Finish Ch. 4	Exercise 3 (Part 1)
9/18	Chapter 2 – Chemistry (drop deadline 9/14)	Exercise 2
9/20	Continue Ch. 2	Exercise 3 (Part 2)
9/25	Finish Ch. 2	Ex. 3, cont.
<b>9/27</b>	Chapter 3 – Cells	Ex. 3, cont.
<b>10/ 2</b>	<b>Exam 1 (Ch. 1, 2 &amp; 4)</b>	Ex. 3, cont.
10/ 4	Continue Ch. 3	<b>Lab Practical 1</b>
10/ 9	Finish Ch. 3	Ch. 7 (Axial Skeleton)
10/11	Chapter 5 – Integumentary System	Exercise 4
10/16	Finish Ch. 5	Ex. 4, cont.
10/18	Chapter 6 – Bone Tissue	Ex. 4 & Ch. 8 (App.)
10/23	Finish Ch. 6	Ex. 4, cont.
10/25	Chapter 9 – Articulations	Ex. 4, cont.
<b>10/30</b>	<b>Exam 2 (Ch. 3, 5 &amp; 6)</b>	Ex. 4, cont.
11/ 1	Chapter 11 – Skeletal Muscles	Ex. 4, cont.
11/ 6	Chapter 10 – Muscle Physiology	<b>Lab Practical 2</b>
11/ 8	Continue Ch. 10	Exercise 5
11/13	Continue Ch. 10	Ex. 5, cont.
<b>11/15</b>	Finish Ch. 10	Ex. 5, cont.
11/20	<b>Exam 3 (Ch. 7-11)</b>	Ex. 5, cont.
<i>11/22</i>	<i>Thanksgiving Break – No Classes 11/22-26</i>	
11/27	Chapter 12 – Nervous System	Ex. 5, cont.
11/29	Continue Ch. 12	Exercise 6
12/ 4	Finish Ch. 12	Ex. 4 & 6, cont.
12/ 6	Chapter 13 – Spinal Cord (W deadline 12/11)	Human specimen
12/11	Chapter 14 – Brain	Ex. 4 & 6, cont.
12/13	Continue Ch. 14	<b>Lab Practical 3</b>
12/18	Finish Ch. 14	<i>no lab</i>
<b>12/20</b>	<b>Exam 4 (Ch. 12-14)</b>	