

BIOLOGY 203
HUMAN ANATOMY AND PHYSIOLOGY
Marilyn M. Shannon, M.A., Course Coordinator
Fall Semester, 2017

INTRODUCTION

Welcome to Biology 203! Biology 203, Human Anatomy and Physiology, is the first semester of a challenging two-semester introduction to the structure and function of the amazing human body. The course will continue as Biology 204 during Spring, 2017. Students who successfully complete the course will demonstrate the ability to

- (1) recognize and use the specialized vocabulary of human anatomy and physiology,
- (2) understand and apply the principles and processes through which the body maintains life and health (“homeostasis”), and
- (3) use critical thinking skills to predict how structure and function interact to maintain homeostasis.

REQUIRED COURSE MATERIALS

McGraw-Hill’s online *Connect Plus with Learn Smart*. The access code for *Connect Plus* also gives you access to the digital text.

Anatomy & Physiology Biology 203 Lecture Notebook, Laboratory Guide & Photo Atlas, 3rd ed., by Karen K. McLellan, M.S., and Marilyn M. Shannon, M.A. (Fountainhead Press, 2015)

COURSE TEXTBOOK

Seeley’s Essentials of Anatomy and Physiology, 9th ed., by VanPutte, Regan, and Russo (McGraw-Hill, 2015). This is the hard copy of the textbook, which you may or may not wish to purchase.

INSTRUCTOR’S OFFICE HOURS, E-MAIL, TELEPHONE, AND WEBSITE

Office Hours:	Tuesdays	3:00-4:15 p.m. in SB 338 5:45-6:15 p.m. (after lecture) in LA 159
	Thursdays	3:00-4:15 p.m. in SB 338 5:45-6:15 p.m. (after lecture) in LA 159
	Friday	Before and after lecture in LA 159

Office:	Science Building 338 (same floor as the anatomy lab)
Office telephone:	(260) 481-6314 (office hours and voice mail anytime)
E-mail	shannon@ipfw.edu
Website:	http://users.ipfw.edu/shannon
Connect Website:	http://connect.mheducation.com

BIOLOGY 203 GENERAL EDUCATION STATEMENT

The General Education program at IPFW requires that approved courses be taken in seven state-mandated different competencies, one of which is Competency B.4, “Ways of Knowing, Scientific Ways of Knowing.” Biology 203 fulfills the requirements for Competency B.4. Students who successfully complete Biology 203 with a C or better will fulfill the following outcomes of Competency B.4. Specifically, this course meets four state-mandated learning outcomes for Scientific Ways of Knowing and one state-mandated learning outcome for Quantitative Reasoning.

- 4.2. Distinguish between scientific and non-scientific evidence and explanations.
- 4.3. Apply foundational knowledge and discipline-specific concepts to address issues or solve problems.
- 4.4. Apply basic observational, quantitative, or technological methods to gather data and generate evidence-based conclusions.
- 4.5. Use current models and theories to describe, explain, or predict natural phenomena.

In addition, Biology 203 fulfills Competency 3.2, Quantitative Reasoning, Outcome 3.2: Represent information/data in mathematical form as appropriate (e.g with functions, equations, graphs, diagrams, tables, words, geometric figures).

Biology 203 fulfills the Area II, “Natural and Physical Sciences” General Education requirement for students enrolled before the 2013-2014 academic year.

LECTURE / RECITATION

The lecture/recitation portion of the class emphasizes physiology--the function of the human body. Much of the physiology that you need to learn will be presented during the lectures, and you will be invited to respond orally as physiological processes are presented. You will be encouraged to ask questions, to examine relationships between anatomy and physiology, to predict homeostatic responses, and to apply physiological knowledge to homeostatic imbalances. Attending the lectures is essential to your success, but the course also requires considerable out-of-class study.

>Lecture Courtesy Expectations Biology 203 is one of the largest lecture classes on campus, with over 180 students. Your learning depends on your ability to concentrate on the lecture and PowerPoint illustrations. It is certainly advisable not to distract yourself with electronic devices or chatting with a neighbor in class. However, students who distract other students or the instructor by using electronic devices for any reason other than the topic at hand, or who chat with others, or who get up and leave before the class is dismissed will be asked to leave (or not return) until the next class. If you know that you have to leave early or that you in some way might distract others, including your instructor, please sit in the back of the lecture hall.

LABORATORY

The lab classes emphasize human anatomy and are completely hands-on. We are fortunate to have teaching labs well provided with a large variety of full size anatomical models, real and artificial skeletons and bones, and some preserved specimens. Lab policies will be explained during your first lab class, and are also detailed in the introductory pages of your *Lab Guide*.

> Lab Courtesy Expectations You are expected to participate in lab. Electronic devices may not be used for any purpose other than the topic at hand. Interfering with the learning of others or the effectiveness of the instructor by inappropriate chatter or use of electronic devices will result in offending students being asked to leave until the next meeting.

> Lab Personal Protection Dress Policy: The University's "personal protection" regulations require that students in *all* teaching labs wear closed-toed shoes, long pants and/or long skirt. Short-sleeve shirts covering at least the same anatomy as a T-shirt are permissible, but not sleeveless shirts, tank tops, or midriff-exposing tops.

ATTENDANCE

Attendance is expected in lab and lecture. Even when the reason for not attending a class is very necessary, missing even one day of lecture or lab makes it difficult to keep up. If you know in advance that you must miss a class, you may be able to make it up during a different time that week by permission of the instructor.

ACADEMIC HONESTY

A conscientious effort will be made by your course coordinator and your lab instructor to ensure that all tests are carefully proctored and that your grade will not be exceeded by someone who chooses to act dishonestly in Biology 203. Academic dishonesty, whether giving or receiving test information during a test, will result in a failing grade for the entire course. The Student Handbook also states that when such events occur, the students' major department chair and the dean of their school must receive a letter concerning the incident, and they may choose to drop the students from their program.

ASSESSMENTS

Four required lecture tests (including the final exam), one optional semi-cumulative lecture test, two lab practical tests, ten lab quizzes/experiment and fourteen online lecture assignments are scheduled throughout the semester.

>Required Lecture Tests (4): Each of the four required lecture tests is a one-hour, 50-item, multiple-choice test. Each will test mainly physiology, consisting of (1) factual information; (2) your ability to understand physiological concepts and processes; and (3) your ability to apply factual information and physiological concepts using critical thinking skills. The final exam, Lecture Test 4, will not be cumulative.

>Optional Semi-cumulative Lecture Test: An optional semi-cumulative lecture test, over the same material as covered on Lecture Tests 1, 2, and 3, will be offered to students who wish to replace their lowest lecture test score with a higher score from this cumulative test. (If this test's score is lower than the first three, it will not be used as part of your accumulated points.) However, the optional test cannot not replace the score from the required, non-cumulative final exam. There is no make-up for this optional test.

>Online Lecture Homework (SmartBook Modules): Fourteen online lecture homework assignments will come from SmartBook, which you will complete in McGraw-Hill's online Connect. Each homework assignment is worth 5 points, and the lowest of seven will be dropped for each half of the course. The assignments are designed to assist you with the current lecture material. You can access these assignments via Blackboard by clicking on the McGraw-Hill Campus button and then clicking on the Connect button. The assignments are adaptive and will help you master the concepts covered in the text. You need to complete each assignment prior to the posted online due date. If you need technical help with Connect, contact McGraw-Hill's Help Center at 800 331-5094 (much faster than using their website). A McGraw-Hill agent will assist you. At the completion of the call they will share a case number with you. Please write down that case number. If for some reason you are unsatisfied with their support or feel that you need further technical assistance, you will need to share that case number with me. I will only answer your Connect technical questions if you have a case number showing that you have made the effort to work through the proper channels.

>Lab Practicals: The two 60-item practicals will test your ability to recognize and name anatomical structures as well as functional anatomy that you have learned in the laboratory. No lecture material will be covered on these tests. The practicals will require use of your "active" memory, since you will be required to recall and write the correct name or function of a structure, rather than just recognize the name, as on a multiple-choice test.

>Lab Quizzes/Experiment: Nine lab quizzes and one lab experiment, worth 8 points each, are scheduled during the semester, five before the first practical and five after the first practical. Most will cover material from the previous week, and like the lab practicals, you will be asked to recall and write the names or functions of anatomical structures exhibited in lab. The lab experiment will be graded based on data gathered and written conclusions.

GRADES

Each test, practical, or quiz or online homework assignment will be graded on a 90-80-70-60 basis, with 90% the lowest A, 80% the lowest B, 70% the lowest C, and 60% the lowest D. Except for the lab quizzes/experiment and online homework, your raw scores will be converted to percentages, and the percentage scores will then be used as points

which will be accumulated to assign the final grade in the course. The lecture constitutes about 65% of your overall accumulated points; the lab contributes about 35% of your overall grade.

Grades from the Online Lecture Homework will be added as raw points; each is worth 5 points. Your lowest homework grade from each half of the semester will be dropped, so that you can gain a total of 60 points from the homework assignments. These homework points are not bonus points.

Grades from the ten lab quizzes/experiments will be used as raw points which will be added to your overall points; each is worth 8 points. Your lowest lab quiz from each half of the semester will be dropped (*but you may not drop the score from the lab experiment*), so that you can gain a total of 64 points from the lab quizzes. These quiz points are not bonus points.

Lecture Test 1	100
Lecture Test 2	100
Lecture Test 3	100
Lecture Test 4 (Final Exam)	100
Lab Practical 1	100
Lab Practical 2	100
Online Lecture Homework	60
Lab Quizzes/Expt.	64
Total possible points	<u>724</u>

At the end of the semester a 90-80-70-60 scale of the cumulative points will be used to determine the final grade. That is, 652 points will ensure an A; 579 points a B; 507 a C; and 434 a D. (The scale could possibly be lowered a bit, but that should not be assumed.) A consistent performance throughout the semester will result in a better grade than a "miracle finish" at the end of the semester, since no greater weight is put on points gained late in the semester rather than early. Because the grading scale and current cumulative point totals are updated after each test, *you will always know your current grade is in this course*. You will be able to view your test scores and cumulative points on Blackboard, and will see the current grading scale on users.ipfw.edu/shannon, the course website.

3-DIGIT ID NUMBER AND ASSIGNED SEAT NUMBER FOR LECTURE TESTS AND LAB PRACTICALS

You will be assigned your own 3-digit ID number for use on every test throughout this course. All your lecture grades will be transferred by computer to a master grading program. Only your 3-digit ID number, not your name, will be used by the computer to post your grades. Therefore, two practices are essential to your grade:

>First, know your number and darken it in on every machine-gradable test answer sheet. (It will be given to you in lab during the third lab class.)

>Second, always check your score on Blackboard to make sure your score is correctly posted. You will need to let me know immediately if your score is incorrect or missing.

>Record your 3-digit ID number here: __ __ __.

A free point, worth 2% on each lecture test, will be given automatically to all students whose lecture tests do not require individual handling to correct technical errors.

At the time you receive your 3-digit I.D. number, you will also receive a seat number consisting of a letter followed by a number, which is assigned for taking all lecture tests.

>Record your seat number here: _____.

Your lab instructor will also assign you a seat before each quiz and lab practical.

MISSED TESTS, HOMEWORK, OR QUIZZES

If you must miss any lecture test or lab practical for any reason, and if you wish to take a make-up, you must leave me an e-mail (shannon@ipfw.edu) or a voice-mail message (260 481-6314) *before* the test is missed. More than one make-up test will require documentation for both absences, and approval by the Biology Department Chair. There is no make-up for the Optional Lecture Test.

>**Lecture Test Make-ups:** The large number of students make individually scheduled make-up tests impossible. Therefore, make-ups for all missed lecture tests (except for the Optional Lecture Test, for which there is no make-up) will be given on Tuesday, November 29, or Thursday, December 1, during afternoon office hours. Make-up lecture tests may consist of a completely different format than the regular tests-- a mix of multiple choice, fill-ins, labeling, and essay questions.

>**Lab Practical Make-up Policy:** Due to set-up space and time required to provide a lab practical, no make-ups are available. Instead, an incomplete (I) grade to be completed during the next time the course is offered (Spring 2017) is the only option offered for make-up of lab practicals.

>**Lab Quiz Policy:** No make-ups are permitted for lab quizzes, even in another lab class during the same week. Any lab quiz not taken will result in a score of 0. However, your lowest lab score for each half of the semester will be dropped.

>**Online Lecture Homework:** No late assignments will be accepted, unless you have a case number due to a technical problem from McGraw-Hill. However, your lowest homework score from each half of the semester will be dropped.

LAST DAY TO WITHDRAW WITH A GRADE OF W--FRIDAY, OCTOBER 27, 2017

After this date, only a serious, documented reason, approved by the dean, will justify a grade of W. After this date, you cannot drop due to poor performance. This is a university-wide policy to which the instructor cannot make exception.

OUT OF CLASS RESOURCES

Below is a list of resources put in place to help you achieve success in Biology 203. Please take advantage of these!

>**Biology 203-204 Website “Green Screen”**: Available through Blackboard or users.ipfw.edu/shannon, this website contains course materials including the syllabus, the PowerPoint illustrations, Lecture Study Organizers, photographs of lab models, and the textbook’s Online Learning Center. The “News You Can Use” section is updated often, and communicates times, dates, places, changes, and corrections as they occur. The grading scale is also available here.

>**Biology 203 Lecture Study Organizers**: Available on the Biology 203-204 website, these summarize what you need to learn from each chapter in the text. They note useful reading, chapter questions, useful illustrations, and practice questions.

> **Seeley’s Essentials of Anatomy and Physiology Online Learning Center**: www.mhhe.com/seeleyess8. The Student Edition allows access to a wealth of learning tools for each chapter, such as animations and downloadable chapter study guides. The Biology 203 Lecture Study Organizers (above) detail useful learning aids.

>**Practice Lecture Test Questions**: A handout with sample lecture test questions will be available before each lecture test. While these will not be the same as the actual test questions, they will help you know what to expect on the coming test.

>**Practice Lab Practical Questions**: Several practice practical questions will be set up during the week before each lab practical so that you may prepare for these tests.

>**Open Lab**: Weekly "Open Labs," giving you time to work in the lab outside of your scheduled lab, will be held at times to be announced (see the “Green Screen,” users.ipfw.edu/shannon).

>**Lecture Supplementary Instruction (SI)**: Weekly group help sessions, conducted by an undergraduate student who has recently been successful in this course, will be held at times to be announced (see users.ipfw.edu/shannon).

>**Tutoring**: Tutoring is available through CASA. It may be scheduled through www.ipfw.edu/casa; or 481-5419. There is no cost for this service.

University Disability Policy

If you have a disability and need assistance, special arrangements can be made to accommodate most needs. Contact the director of Services for Students with Disabilities (Walb, Room 113, phone 481-6658), as soon as possible to work out the details. Once the director has provided you with a laminated card attesting to your needs for modification, bring the card to your instructors.

BIOLOGY 203 LECTURE SCHEDULE

and online homework assignments

Afternoon Lectures: Tuesday-Thursday, 1:30-2:45 p.m., LA 159 or

Evening Lectures: Tuesday-Thursday, 4:30-5:45 p.m., LA 159

Tuesday and Thursday, August 22, 24

Introduction to Physiology. Text Chapter 1

Cells 1. Text Chapter 3

Chapter 1 online homework due Monday, August 28. (Homework assignments are all due at 11:59 p.m. of the assigned date.)

Tuesday and Thursday, August 29, 31

Cells 2. Text Chapter 3

Tissues 1. Text Chapter 4

Chapter 3 online homework due Thursday, August 31

Tuesday and Thursday, September 5, 7

Tissues 2. Text Chapter 4

Integumentary System. Text Chapter 5

Chapter 4 online homework due Wednesday, September 6.

Chapter 5 online homework due Friday, September 8

Tuesday and Thursday, September 12, 14

LECTURE TEST 1 over Introduction through Integumentary System, and anatomical terms from Lab 1.

Skeletal System 1 (Thursday). Text Chapter 6

Tuesday and Thursday, September 19, 21

Skeletal System 2. Text Chapter 6

Muscular System 1. Text Chapter 7

Chapter 6 online homework due Friday, September 22.

Tuesday and Thursday, September 26, 28

Muscular System 2. Text Chapter 7

Muscular System 3. Text Chapter 7

Chapter 7 online homework due Monday, October 2.

Tuesday and Thursday, October 3, 5

Nervous System Introduction. Text Chapter 8

Completion/review of Skeletal, Muscular, Nervous System Intro

Chapter 8, "Nervous System Introduction," online homework due Friday, October 6.

No class Tuesday, October 10: Fall Break

Thursday, October 12

LECTURE TEST 2 over Skeletal System, Muscular System, and Introduction to Nervous System.

Tuesday and Thursday, October 17, 19

**Action Potentials. Text Chapter 8
Synapses. Text Chapter 8**

Tuesday and Thursday, October 24, 26

**Spinal Cord and Brain as an Organ. Text Chapter 8
Brain Functions and Autonomic Nervous System 1. Text Chapter 8**
Chapter 8, "Action Potentials, CNS" online homework due
Wednesday, October 25

Tuesday and Thursday, October 31, November 2

**Autonomic Nervous System 2. Text Chapter 8
General and Chemical Senses. Text Chapter 9**

Chapter 8 Nervous System "Nerve Tracts + ANS" online homework
due Wednesday, November 1

Chapter 9 Senses: "General and Chemical" online homework due
Monday, November 6

Tuesday and Thursday, November 7, 9

**Completion/review of Nervous System through Chemical Senses
LECTURE TEST 3 (Thursday) over Action Potentials through
Chemical Senses**

Tuesday and Thursday, November 14, 16

**Balance and Hearing. Text Chapter 9
Vision. Text Chapter 9**

Tuesday, November 21

**Optional Semi-cumulative Lecture Test over previously covered
material from Lecture Tests 1, 2, and 3**

No class Thursday, November 23: Thanksgiving Day

Chapter 9 Senses: "Balance, Hearing, Vision" online homework
due Monday, November 27

Tuesday and Thursday, November 28, 30

**Endocrinology 1. Text Chapter 10
Endocrinology 2, Blood 1. Text Chapters 10 and 11**

Chapter 10 online homework due Friday, December 1

[Tuesday or Thursday, November 28 or 30: Make-up lecture tests. If you have missed Lecture Tests 1, 2, or 3, you should have already arranged to take a hand-gradable make-up test during office hours.]

Tuesday and Thursday, December 5, 7

Blood 2. Text Chapter 11

Blood 3; review. Text Chapter 11

Chapter 11 Blood, Part 1 online homework due Saturday ,
December 9

Chapter 12, Blood, Part 2 online homework due Saturday,
December 9

Thursday, December 14 (*Subject to confirmation of time and place by Registrar's Office, final will be in LA 159 at the same time that your lecture section usually meets.*)

FINAL EXAM (Lecture Test 4) over Balance and Hearing through Blood. It will not be cumulative.

BIOLOGY 203 LABORATORY SCHEDULE

(All assignments are found in the *Lab Guide*.)

Lab 1 Tuesday- Thursday, August 22-24

Introduction to Human Anatomy (Lab Guide pages 2-7)

Note: This information will be tested on Lecture Exam I.

Lab 2 Tuesday-Thursday, August 29-31

Introduction to Bones and Muscles (Lab Guide pages 8-13)

Lab 3 Tuesday-Thursday, September 5-7

The Pelvic Girdle and Lower Limb (Lab Guide pages 14-22)

Quiz 1 over last week's material

Lab 4 Tuesday-Thursday, September 12-14 **Bone and Joint Anatomy** (Lab Guide pages 23-29)

Quiz 2 over last week's material

Lab 5 Tuesday-Thursday, September 19-21

The Pectoral Girdle and Arm (Lab Guide pages 30-37)

Quiz 3 over last week's material

Lab 6 Tuesday-Thursday, September 26-28

The Forearm, Wrist and Hand (Lab Guide pages 38-45)

Quiz 4 over last week's material

Lab 7 Tuesday- Thursday, October 3-5

Review (Lab Guide pages 8-45)

Quiz 5 over last week's material

Fall Break: Monday and Tuesday, October 9 and 10

Optional Open Lab for all students **Wednesday, October 11, and Thursday, October 12**, in SB 377 at times to be announced.

Lab 8 Tuesday- Thursday, October 17-19

LAB PRACTICAL 1. Any and all boldfaced material from all previous topics (Labs 2-7, pages 8-45) will be covered on a write-in test using mostly bones and models. This test will have 60 items and will last 55 minutes. Your instructor will announce your starting time.

Lab 9 Tuesday-Thursday, October 24-26

The Brain, Cranial Nerves I-IV, and Spinal Cord (Lab Guide pages 46-54)

Lab 10 Tuesday-Thursday, October 31-November 2

The Eye, The Ear, Cranial Nerves V-VIII, (Lab Guide pages 55-65) **Quiz 6** over last week's material

Lab 11 Tuesday-Thursday, November 7-9

Skull, Muscles of Head and Neck, Cranial Nerves IX-XII (Lab Guide pages 66-74)

Quiz 7 over last week's material

Lab 12 Tuesday-Thursday, November 14-16

Vertebral Column, Rib Cage, Muscles of the Back and Abdomen;

Peripheral Nerves (Lab Guide pages 75-85)

Quiz 8 over last week's material

Optional Open Lab for all students **Tuesday, November 21**, in SB 377 at times to be announced

Thanksgiving Holiday Recess: Wednesday-Friday, November 22-24

Lab 13 Tuesday-Thursday, November 28-30

Review (Lab Guide pages 46-85), and **Two-Point Discrimination Test** (Handout, worth 8 points)

Quiz 9 over last week's material

Lab 14 Tuesday-Thursday, December 5-7

LAB PRACTICAL 2. Any and all bold-faced vocabulary from Labs 9-13 (pages 46-85) will be tested on a write-in test using mostly bones and models. This test will have 60 items and will last 55 minutes. Your instructor will announce your starting time.

203 Laboratory Class Times and Locations

All labs meet in SB 377 except for Thursday 2:30 and 6:00 p.m., which have labs scheduled in both SB 377 and SB 369. (If you are scheduled for Thursday 2:30 or 6:00 p.m., check your registration to find if your lab is in SB 377 or SB 369.) University policy prohibits students from attending any labs for which they are not registered, unless they have the express permission of the laboratory instructor. In case you must miss a lab, the schedule below can be used to help you arrange for a make-up lab. *You may not arrange for a make-up quiz, and you may not enter a lab when a quiz is being given.*

BIOL 203 Labs

Lab Time	Location	Instructor
Tuesday, 9:00-10:50 a.m.	SB 377	Alexander Silowsky
Tuesday, 11:00-12:50	SB 377	Jonathan Danielson
Tuesday, 1:00-2:50	SB 377	Tyler Shuman
Tuesday, 3:00- 4:50	SB 377	Areli Gutierrez
Tuesday, 6:00-7:50	SB 377	Tyler Scoville
Wednesday, 8:00-9:50 a.m	SB 377	Patrick Ransbottom
Wednesday, 10:00-11:50	SB 377	Patrick Ransbottom
Wednesday, 1:00-2:50	SB 377	Tyler Shuman
Wednesday, 3:00-4:50	SB 377	Cecelia Smith
Wednesday, 5:30-7:20	SB 377	Reine Sovey
Thursday, 9:00-10:50 a.m.	SB 377	Alexander Silowsky
Thursday, 11:00-12:50	SB 377	Reine Sovey
Thursday, 2:30- 4:20	SB 377	Alexander Silowsky
Thursday, 2:30- 4:20	SB 369	Jonathan Danielson
Thursday, 6:00-7:50	SB 377	Reine Sovey
Thursday, 6:00- 7:50	SB 369	Jonathan Danielson
Weekend College Labs		
Friday, 3:00-4:50 p.m.	SB 377	Laura Steele
Friday, 8:00-9:50 p.m.	SB 377	Marilyn Shannon