



COURSE NUMBER AND TITLE

NR.110.205 Physiology with Lab

CREDITS

4 credits

PRE- AND COREQUISITES

None

COURSE DESCRIPTION

This course will introduce the functions and regulation of major human body systems. Students will learn how the parts within a body system work together to seamlessly accomplish tasks. There will be discussion of the regulation of organ function, a critical component of physiology. After an introduction on electrolytes, the physiologic processes to be covered include functions of the cardiovascular system, lymphatic system, and digestive system, among others. Upon completion of the course, students will have an understanding of normal healthy anatomical function that will prepare them for professional health programs. This course includes a virtual laboratory component designed to complement lecture topics.

OBJECTIVES

The course objectives are organized in line with the program outcomes. At the end of the course, the student will be able to:

1. Describe the functions and interactions of major organ systems in human body.
2. Explain the mechanism and importance of maintaining water, electrolytes, acid-base balance.
3. Discuss the function of the cardiovascular system.
4. Describe the key purpose of the lymphatic and specific cranial elements.
5. List the functions of the components necessary for respiration, digestion, and urination.
6. Identify the functions of the regulatory elements, i.e. hormones, of the reproductive systems.

REQUIRED TEXTBOOKS AND OTHER COURSE MATERIALS

Saladin, K. S. (2017). *The unity of form and function (8th ed.)*. New York, NY: McGraw-Hill Higher Education.

Access to McGraw-Hill Connect Plus with LearnSmart/LearnSmart Labs: Students must purchase access code to Connect Plus in order to access the assessment items and other learning materials for this course. Please do not purchase from any 3rd party vendor before reviewing the information presented in the Blackboard course site.

Access to a reliable computer and internet connection: It is recommended that students using Windows-based computers should have the Windows 7 or newer operating system, and that Mac users have OS 10.6 or later. We also recommend that you use the most updated version of either Mozilla Firefox or Google Chrome as your web browser for this course. Other operating systems and web browsers may not be fully supported by the Blackboard or McGraw Hill Connect. Please see the Blackboard course site and for detailed system requirements.

When citing your textbook as a reference, please use proper AP format:

Saladin, K.S., Gan, C.A., & Cushman, H.N. (2017). *Anatomy and physiology the unity of form and function* (8th ed.). New York, NY: McGraw-Hill Higher Education.

SUMMARY OF LEARNING ASSESSMENTS/ASSIGNMENTS

LEARNING ASSESSMENT/ ASSIGNMENT	COURSE OBJECTIVES ADDRESSED	WEIGHT TOWARD FINAL COURSE GRADE
Module Graded Quizzes, 10 quizzes in total (20pts each)	1, 2, 3, 4, 5, 6	20%
Lab Assignments, 8 labs in total (100pts each)	1, 2, 3, 4, 5, 6	25%
Discussion Board, 10 posts in total (10pts each)	1, 2, 3, 4, 5, 6	15%
Exams, 3 in total (100pts each)	1, 2, 3, 4, 5, 6	40%

LEARNING ASSESSMENTS/ASSIGNMENTS

Graded Module Quizzes

These are timed quizzes that are designed to test your mastery of the material covered in each module and keep you on track in your reading. The quizzes are open book and open notes. One attempt is allowed for each quiz. There are 10 graded quizzes in total in this course. You will find these quizzes under the “Assessment” section of each module.

Lab Sessions

Lab sessions will be done via LearnSmart Labs by McGraw-Hill. An average of 60% must be achieved in the lab component of the course in order to for you to pass the course.

Discussion Boards

Weekly discussions can be accessed from “Discussion Board” link on the left-side menu of the course site, or from within each module. There are 10 module-related discussion board assignments for this course.

Exams

There are three exams consisting of multiple choice and short answer questions. They are open book, open notes and timed. Only one attempt is allowed for each exam. There are no makeup exams.

Optional Learning Activities

Throughout the course, you will find Knowledge Check activities after each recorded lecture and Practice quizzes under the section in each module. In addition, SmartBook readings are also available if you prefer to read the textbook online. The Knowledge Check, Practice quizzes and SmartBook reading assignments provide self-assessment of the information presented in the lectures and the textbook and are not graded or counted towards your final course grade.

GRADING SCALE

RANGE	LETTER GRADE	GRADE POINT
97 – 100	A+	4.0
93 – 96	A	4.0
90 – 92	A-	3.7
87 – 89	B+	3.3
83 – 86	B	3.0
80 – 82	B-	2.7
77 – 79	C+	2.3
73 – 76	C	2.0
70 – 72	C-	1.7
67 – 69	D+	1.3
63 – 66	D	1.0
60 – 62	D-	0.7
<60	F	0

ACADEMIC POLICIES

For a full list of academic policies, please see the current academic catalog and

handbook.

COURSE POLICIES

All course assignments must be turned in by the specified due date and time. Once the due date and time have passed, 10% of the total points you have earned on the assignment will be deducted per day (per 24 hour period). **There are no makeup or extra credit assignments allowed, and assignments submitted 10 days late will not receive credit.** Please contact the course instructor prior to the due date in the case of extenuating circumstances.

COMMUNICATION POLICY

Students may communicate with the instructor by email, which is provided in the Contact Information area. The instructor will respond to students within 48 hours. Assignment feedback will be provided to students within two weeks of submission.

All official communication, notices, & announcements will be distributed through student JHU-SON e-mail accounts via blackboard. The student is accountable for checking this account regularly and for all course communication sent to it.

Students are responsible for reading “Netiquette” which is located under Syllabus & Course Info on the Blackboard site. Netiquette provides simple guidelines for civil on-line discourse & behavior, that participants are to follow and expect of one another.

HONOR CODE

Students enrolled in the Johns Hopkins University School of Nursing are expected to conduct themselves in a manner that upholds the values of this institution of higher education. Each student is obligated to refrain from violating academic ethics and maintaining high standards of conduct. In addition, the School of Nursing upholds the professional code of ethics established in the Code of Ethics for Nurses (ANA, 2015). Each student is held accountable for adhering to the American Nurses Association Code of Ethics. For the full Johns Hopkins School of Nursing Honor code, please see the current [academic catalog and handbook](#).

EXAM INTEGRITY & STUDENT IDENTITY VERIFICATION

This course may require the use of technology and/or software to ensure exam integrity and verify the identity of the student taking the exam. Additional information and directions will be provided in the course website.

DISABILITY SERVICES

If you have a disability and may require accommodation in this course, please contact the *Office of Student Affairs* at (410) 955-7545 or SON-DSS@jhu.edu to discuss your specific needs.

COURSE SCHEDULE

Module	Module Subtopics	Learning Activities, Formative Assessment & Resources	Evaluative Assessment
Welcome – Start Here	<ul style="list-style-type: none"> • Getting Started 	Familiarize yourself with Blackboard	Discussion Board: Introduce Yourself Avoiding Plagiarism Module
Module 1: Cell Form and Function	<ul style="list-style-type: none"> • Cell structure • Membrane Transport 	<p>Saladin, K. S. (2017). <i>The unity of form and function (8th ed.)</i>. New York, NY: McGraw-Hill Higher Education.</p> <ul style="list-style-type: none"> • Chapter 3: Cellular Form and Function <p>Review the lecture materials posted in the module for this week.</p>	Module 1 Lab: Lab Safety Module 1 Graded Quiz Module 1 Discussion Board
Module 2: Water, electrolytes, acids & bases	<ul style="list-style-type: none"> • Regulation of intake/output • Control of pH 	<p>Saladin, K. S. (2017). <i>The unity of form and function (8th ed.)</i>. New York, NY: McGraw-Hill Higher Education.</p> <ul style="list-style-type: none"> • Chapter 24: Fluid, Electrolyte, and Acid-Based Balance <p>Review the lecture materials posted in the module for this week.</p>	Module 2 Lab: Diffusion Module 2 Lab: Osmosis Module 2 Graded Quiz Module 2 Discussion Board
Module 3: Nervous System	<ul style="list-style-type: none"> • Supportive cells • Electrophysiology of neurons • Neural integration 	<p>Saladin, K. S. (2017). <i>The unity of form and function (8th ed.)</i>. New York, NY: McGraw-Hill Higher Education.</p> <ul style="list-style-type: none"> • Chapter 12: Nervous Tissue 	Module 3 Graded Quiz Module 3 Discussion Board

Module	Module Subtopics	Learning Activities, Formative Assessment & Resources	Evaluative Assessment
		Review the lecture materials posted in the module for this week.	
Exam 1	None	Review content in Module 1 through Module 3	
Module 4: Lymphatic System	<ul style="list-style-type: none"> • Immunities • Immune system disorders 	<p>Saladin, K. S. (2017). <i>The unity of form and function (8th ed.)</i>. New York, NY: McGraw-Hill Higher Education.</p> <ul style="list-style-type: none"> • Chapter 21: The Lymphatic and Immune Systems <p>Review the lecture materials posted in the module for this week.</p>	<p>Module 4 Graded Quiz Module 4 Discussion Board</p>
Module 5: Cardiovascular System	<ul style="list-style-type: none"> • Cardiac conduction system • Electrical and contractile activity • Cardiac cycle and output 	<p>Saladin, K. S. (2017). <i>The unity of form and function (8th ed.)</i>. New York, NY: McGraw-Hill Higher Education.</p> <ul style="list-style-type: none"> • Chapter 19: The Circulatory System: Heart • Chapter 20: "The Circulatory System: Blood Vessels and Circulation <p>Review the lecture materials posted in the module for this week.</p>	<p>Module 5 Lab: Heart & ECG Module 5 Lab: Pulse Rate & Blood Pressure Module 5 Graded Quiz Module 5 Discussion Board</p>
Module 6: Respiratory System	<ul style="list-style-type: none"> • Pulmonary ventilation • Gas exchange and transport • Respiratory disorders 	<p>Saladin, K. S. (2017). <i>The unity of form and function (8th ed.)</i>. New York, NY: McGraw-Hill Higher Education.</p> <ul style="list-style-type: none"> • Chapter 22: The Respiratory System 	<p>Module 6 Lab: Respiratory System Module 6 Graded Quiz Module 6 Discussion Board</p>

Module	Module Subtopics	Learning Activities, Formative Assessment & Resources	Evaluative Assessment
		Review the lecture materials posted in the module for this week.	
Module 7: Brain & Cranial Nerves	<ul style="list-style-type: none"> • Forebrain, hindbrain, and midbrain • Cranial nerves 	<p>Saladin, K. S. (2017). <i>The unity of form and function (8th ed.)</i>. New York, NY: McGraw-Hill Higher Education.</p> <ul style="list-style-type: none"> • Chapter 14: The Brain and Cranial Nerves <p>Review the lecture materials posted in the module for this week.</p>	<p>Module 7 Graded Quiz Module 7 Discussion Board</p>
Exam 2	None	Review content in Module 4 through Module 7	
Module 8: Digestive System	<ul style="list-style-type: none"> • Chemical digestion and absorption 	<p>Saladin, K. S. (2017). <i>The unity of form and function (8th ed.)</i>. New York, NY: McGraw-Hill Higher Education.</p> <ul style="list-style-type: none"> • Chapter 25: The Digestive System <p>Review the lecture materials posted in the module for this week.</p>	<p>Module 8 Lab: Digestive System Module 8 Graded Quiz Module 8 Discussion Board</p>
Module 9: Urinary System	<ul style="list-style-type: none"> • Urine and renal function tests 	<p>Saladin, K. S. (2017). <i>The unity of form and function (8th ed.)</i>. New York, NY: McGraw-Hill Higher Education.</p> <ul style="list-style-type: none"> • Chapter 23: The Urinary System <p>Review the lecture materials posted in the module for this week.</p>	<p>Module 9 Graded Quiz Module 9 Discussion Board</p>

Module	Module Subtopics	Learning Activities, Formative Assessment & Resources	Evaluative Assessment
Module 10: Reproductive System	<ul style="list-style-type: none"> • Puberty • Sexual response 	<p>Saladin, K. S. (2017). <i>The unity of form and function (8th ed.)</i>. New York, NY: McGraw-Hill Higher Education.</p> <ul style="list-style-type: none"> • Chapter 27: The Male Reproductive System • Chapter 28: The Female Reproductive System <p>Review the lecture materials posted in the module for this week.</p>	<p>Module 10 Lab: Mitosis and Meiosis Module 10 Graded Quiz Module 10 Discussion Board</p>
Exam 3	None	Review content in Module 8 through Module 10	