

Course Syllabus

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MARIAN UNIVERSITY

Indianapolis

BIO 226 General Human Physiology 5 Credits

Semester and Year: First Five-Weeks, Summer 2025

Email: Contact via Canvas email

Prerequisite: None, but BIO 225 and CHE 100 are strongly recommended

Course Description: The content of this course will provide a full description of all the essential aspects of human physiology. This course is designed to provide all the essential physiological content required for anyone going forward into a health profession.

Required Textbook(s):

Human Physiology, 2/E, Derrickson, 2017, Wiley Publishers

Loose-Leaf - ISBN: 9781119497783 (includes access code)

OR

Stand Alone Access Code- ISBN: 9781119497752 (includes access to e-text)

Textbook Resources: WileyPLUS

You **MUST** purchase an "Access Code" to **WileyPLUS** for the course. Many of your assignments are linked to WileyPLUS content within the course

There are two options to purchase an access code:

1. When purchasing the textbook new from the bookstore an access code is also included.
2. Directly from WileyPLUS. When you attempt to access your first WileyPLUS assignment on Canvas you will be prompted to purchase (or enter your already purchased) an access code. When you purchase the access code you will also be given access to the e-text.

WileyPLUS Integration Access:

Upon initial introduction to the Canvas course, you will need to establish an account with the WileyPLUS platform. You may do so by following the below instructions:

1. Click the Wiley Course Resources link in the Canvas course
2. Follow WileyPLUS prompts to establish an account
3. Upon accessing the WileyPLUS platform, view the Getting Started with WileyPLUS resource to familiarize yourself with the platform and its resources

Additional Resources:

The Mother Teresa Hacklemeier Memorial Library at Marian University provides various databases <https://www.marian.edu/current-students/library> (Links to an external site.) E-> <https://www.marian.edu/current-students/library>)

Upon successful completion of this course, students will be able to:

Course Outcomes:

The content of this course will provide a full description of all the essential aspects of human physiology. This course is designed to provide all the essential physiological content required for anyone going forward into a health profession.

Course Learning Objectives

Utilize appropriate use of medical terminology associated with the physiology of each organ system

Analyze important concepts including cell structure, protein synthesis, enzyme kinetics, energy production, cell metabolism, and membrane transport

Determine the responses of neurophysiology including the propagation of an action potential, the role of ions and the release of neurotransmitters in this process

Differentiate similarities and differences between the functioning of the sympathetic and parasympathetic nervous system

Outline the response of stimuli to the sensory receptors and function of the sense organs associated with each of the special senses

Analyze muscle structure, stimulation of the muscle from a neuron, and the role of muscle tissue contractile proteins during a muscle contraction

Classify the components of the circulatory system including arteries, veins, and the heart and how they function

Describe the function of formed elements and proteins in blood

Analyze the exchange processes of the respiratory and urinary systems

Methods of Assessment

Article Summary 1, 2, 3, & 4,
Discussion: Black Market,
Discussion: Umbilical Cord Blood

Chapter Assessments 1-5, Enzyme
Activity Lab, Lab Exam 1, Final
Exam

Chapter Assessment 7, Action
Potentials Lab, Lab Exam 1, Final
Exam

Chapter Assessment 10, Final Exam

Discussion: Special Senses, Chapter
Assessment 9, Final Exam

Chapter Assessment 11, Recruitment
& Isotonic & Isometric Contractions
Lab, Lab Exam 1, Final Exam

Chapter Assessment 14 & 15, Effect
of Exercise on Cardiac Output Lab,
Lab Exam 1, Final Exam

Chapter Assessment 16, Hematocrit
& Hemoglobin Concentration and
Blood Typing Lab, Lab Exam 1, Final
Exam

Chapter Assessment 18 & 19,
Respiratory Volumes Lab, Lab Exam
2, Final Exam

Demonstrate how the mechanisms of the respiratory and urinary systems contribute to pH balance of the blood	Discussion: Acid-Base Balance, Chapter Assessments 18 & 19, Acid-Base Balance Lab, Lab Exam 2, Final Exam
Analyze the process of digestion of carbohydrates, proteins and lipids	Chapter Assessment 21, Blood Glucose Regulation Lab, Lab Exam 2, Final Exam
Describe the role of the endocrine system in communication and relate it to the nervous system as a means by which it directs the functioning of the human body	Chapter Assessment 13, Homeostatic Imbalances of Thyroid Function Lab, Lab Exam 2, Final Exam
Analyze the connections between the components of the immune system and its importance in the immunological response	Chapter Assessment 17, Final Exam
Relate the functions of the male and female reproductive systems to their associated anatomical structures	Chapter Assessment 23, Discussion: Umbilical Cord Blood, Final Exam

Teaching Strategies:

Audios, discussion, assigned readings, web-based lab activities, & assignments.

Lectures:

All questions on the lecture exam will deal with material covered in the online lectures, presentations and reading assignments. Therefore, it is greatly to your advantage to utilize all resources available to you.

Laboratory:

All questions on the laboratory exam will pertain to material covered in the online computer simulations found on the PowerPhys lab activities. Therefore, it is greatly to your advantage to work through the computer simulations in their entirety. To help you prepare for the online computer simulations if you read through the pages associated with the computer simulation and the "Lab Intro/Review" sheets linked to each of the Modules PRIOR to attempting the simulation.

Assignments & Assessment Methods:

Methods of Evaluation

The **lecture contribution** to the overall grade is determined based on the following point total:

5 points: One Assignment Zero-Scavenger Hunt. This is a "quiz" that is taken at the start of the course to help you learn to navigate the course and become familiar with content. This is meant to be a fun activity and can be completed as many times as you wish.

270 points: Eighteen 15-point chapter Adaptive Practices (AP's). These are assigned for each chapter and help you gain a mastery of important concepts from each of the chapters.

The AP's may be completed as many times as you wish (up until the due date) to improve your score. Your most recent score will be recorded in the gradebook at the due date NOT the overall best scoring attempt.

Point allotment for this assignment is as follows:

Points for each adaptive practice will be according to the percentage of proficiency of the assignment.

81% -100% = 15/15 points

61% - 80% = 11.25/15 points

41%-60% = 9/15 points

0%-40% = 0/15 points

108 points: Four 27-point Discussion questions. Students are expected to make an initial post responding to the discussion question prompt and then make (2) replies to classmates. A rubric is attached to each discussion question to help you understand the grading criteria.

100 points: Four 25-point Article Summary assignments. Students are expected to write a summary of a peer edited article related to material covered within the module that the Article Summary is assigned. Be sure to review the grading rubric before starting on your Article Summary. The rubric describes all of the elements you will need to include in the Article Summary.

360 points: Eighteen 20-point chapter assessments (quizzes). Each quiz consists of 20 primarily multiple-choice or T/F questions. **You will have 40 minutes to complete each of the chapter assessments.**

100 points: One 100-point Final Exam. This exam will be cumulative and composed of approximately 2-3 questions from each chapter covered in the course. The Final Exam will consist of 50 primarily multiple-choice or T/F questions. **You will have 60 minutes to complete the Final Exam.**

1. The **laboratory contribution** to the overall grade is determined based on the following point total:

50 points: Two 25-point exams will be given. These tests will have 25 multiple-choice questions worth one point each. **You will have 40 minutes to complete the lab exam.**

135 points: Nine 15-point PowerPhys lab report pdf's. The review sheets may also be completed as you are working through your PowerPhys lab stimulation. These sheets are meant to outline important material from the simulations that may be found later on your lab exams. **You will only need to answer the questions found on the "Lab Handout" document when completing the PowerPhys lab activity "Lab Report".** Once you complete the entire PowerPhys lab activity and the results/discussion questions indicated in the "Lab Handout" document, you will then save a pdf of the lab and submit it for grading.

Grading Scale

Proposed Grading Scale: Total points = 1128

93% - 100% =A

90% - 92.9% =A-

87% -89.9% = B+

83% -86.9% =B

80% -82.9% = B-

77% - 79.9% = C+

73% - 76.9% =C

70% - 72.9% = C-

67% -69.9% = D+

60% -66.9% =D

00% - 59.9% =F

Course Policies:

Academic Integrity:

The search for truth, the transmission of knowledge, and the facilitation of moral development are the avowed goals of institutions of higher education around the world. Members of the Marian University community are expected to maintain the highest level of honesty in every phase of their academic lives and to help create and promote an ethical atmosphere in which the goals of the University can be fully realized. All Marian University students are responsible for knowing and avoiding academically dishonest behaviors.

Plagiarism (using the ideas and/or words of someone else without proper reference) and other forms of cheating are not tolerated. *Students guilty of plagiarism or other forms of cheating are subject to disciplinary action that may include failure in the course or expulsion from the University.* For more details on plagiarism, see reference materials posted in the Introduction module. Thus, be sure to properly cite and reference all sources used.

Plagiarism is defined in detail in the [Code of Student Rights and Responsibilities](https://www.marian.edu/docs/default-source/campus-life/codeofstudentrightsandresponsibilities.docx?sfvrsn=14) (https://www.marian.edu/docs/default-source/campus-life/codeofstudentrightsandresponsibilities.docx?sfvrsn=14) under Section 8: Academic Conduct Procedures, as well as an extended description of academic dishonesty.

Adherence to Academic Integrity & Use of AI and Chat GPT:

At Marian University, all students are called to uphold academic integrity in all their academic endeavors, including the responsible use of AI tools, reflecting both the institution's commitment to intellectual and moral integrity and its foundational Franciscan values. Students are expected to exemplify honesty, honor, and respect for the truth, demonstrating their intellectual and moral integrity as outlined in the [Code of Student Rights and Responsibilities](https://urldefense.com/v3/https://www.marian.edu/academics/assets/documents/student-code-of-rights-and-responsibilities.pdf) (https://urldefense.com/v3/https://www.marian.edu/academics/assets/documents/student-code-of-rights-and-responsibilities.pdf;!!CSKv4JNZfdoHTMmavAlmnoa-UuWHQVxQl3HYxIUkwLmlsOK2XEQN2K3SBAYm3puRjSHjMyHf9d9-cjFUO8NGAHGz6CvM_yc1qB84CSIKNqzFw\$). By embodying these responsibilities, students contribute to a just and flourishing academic community. Students are allowed to use advanced automated tools (artificial intelligence or machine learning tools such as ChatGPT or Dall-E 2) on assignments in this course if that use is properly documented and credited. For example, text generated using ChatGPT-3 should include a citation such as: "Chat-GPT-3. (YYYY, Month DD of query). "Text of your query." Generated using OpenAI. <https://chat.openai.com>"

Material generated using other tools should follow a similar citation convention. Decisions are at the discretion of the instructor, so students are encouraged to communicate with their instructors.

Late Policy & Due Date Extensions:

Assignments will close for submission 72 hours after the due date. Any assignment submitted late in that 72 hour time period will receive a 10% late penalty. For any final exam, paper, etc. that is due the last day of the term/session, the 72-hour late policy does not apply past the date the term or session ends. Late initial posts in discussion boards will receive a 2-point deduction in the rubric.

Further extensions and accommodations, including exams, may be given consideration for unforeseen, documented hardships, such as medical emergencies, documentable technical issues, death of a loved one, travel and weather emergencies, etc. However, simply forgetting, time zone differences, going on vacation, or not performing as well as intended are not acceptable excuses. If you believe an extension or accommodation is warranted, please contact your instructor.

Exam Retakes: Exams retakes are different than requesting and being granted an extension on an exam. There are no exam retakes allowed in this course. Once you open an exam, you're stating that you have prepared adequately for the exam and you're accepting the results of the exam.

Extra Credit: There is no extra credit in this course.

Withdrawal:

It is the responsibility of the student to know and follow the University policies on academic integrity and class withdrawal.

Students with Disabilities:

Students with disabilities who have proper documentation must contact the Director of Academic Support Services in the Counseling and Consultation Services office to set up a documentation review. If after the review, accommodations are deemed appropriate, an accommodation plan will be developed. As per the ADA (Americans with Disabilities Act) no accommodations can be provided until this process is complete.

Accommodation/Accessibility Statement: Marian University, through policy and practice, is committed to providing equitable access to learning opportunities for all students. If you experience, or anticipate experiencing, barriers to your education due to a disability please contact the Personalized Learning Center by emailing plc@marian.edu or calling 317.955.6540 to start a conversation.

Although a student may request an accommodation at any time, it is best to initiate the accommodation process as early as possible as it may take time to complete the interactive process and accommodations will not be implemented retroactively. If a reasonable accommodation is determined, a Course Accommodation Letter will be created at the Personalized Learning Center for the student to provide to their faculty members with information related to their accommodations. Faculty will not set up disability-related accommodations without a current semester Course Accommodation Letter.

Faculty, Staff or Student questions or concerns regarding the accommodation process can be sent to plc@marian.edu or Mandie Greiwe, agreiwe@marian.edu, Director of the Personalized Learning Center.

Diversity & Inclusion Statement: Marian's Adult and Online Programs (MAP) at Marian University is a collaborative academic community committed to fostering a diverse and inclusive community across the intersections of race, ethnicity, religion, sexual orientation, gender identity, age, disability

status, socio-economic background, political perspective, culture, immigration status, and national origin. Online programs is committed to creating a safe and just environment of respect for students, faculty, and staff following our shared Franciscan values.

****Any changes to this syllabus will be communicated to the student.**

Please click here to download a [PDF of the syllabus](https://marian.instructure.com/courses/729026/files/318538312/download?download_frd=1). (https://marian.instructure.com/courses/729026/files/318538312/download?download_frd=1)

Course Summary:

Date	Details	Due
Tue May 6, 2025	<input type="checkbox"/> Submit: Assignment Zero- Course Scavenger Hunt https://marian.instructure.com/courses/729026/assignments/50196159	due by 11:59pm
Wed May 7, 2025	<input type="checkbox"/> Discuss: Welcome and Introductions! (Initial posts due on Wednesdays) https://marian.instructure.com/courses/729026/assignments/50196060	due by 11:59pm
Fri May 9, 2025	<input type="checkbox"/> PowerPhys: Enzyme Activity Lab https://marian.instructure.com/courses/729026/assignments/50196110	due by 11:59pm
	<input type="checkbox"/> Submit Chapter 1: Adaptive Practice https://marian.instructure.com/courses/729026/assignments/50196139	due by 11:59pm
	<input type="checkbox"/> Submit Chapter 2: Adaptive Practice https://marian.instructure.com/courses/729026/assignments/50196146	due by 11:59pm
	<input type="checkbox"/> Submit Chapter 3: Adaptive Practice https://marian.instructure.com/courses/729026/assignments/50196148	due by 11:59pm
	<input type="checkbox"/> Submit Chapter 4: Adaptive Practice https://marian.instructure.com/courses/729026/assignments/50196151	due by 11:59pm
Sun May 11, 2025	<input type="checkbox"/> Submit Chapter 5: Adaptive Practice https://marian.instructure.com/courses/729026/assignments/50196153	due by 11:59pm
	<input type="checkbox"/> Take: Chapter 1 Assessment https://marian.instructure.com/courses/729026/assignments/50196167	due by 11:59pm
	<input type="checkbox"/> Take: Chapter 2 Assessment https://marian.instructure.com/courses/729026/assignments/50196177	due by 11:59pm
Sun May 11, 2025	<input type="checkbox"/> Take: Chapter 3 Assessment https://marian.instructure.com/courses/729026/assignments/50196180	due by 11:59pm
	<input type="checkbox"/> Take: Chapter 4 Assessment https://marian.instructure.com/courses/729026/assignments/50196181	due by 11:59pm
	<input type="checkbox"/> Take: Chapter 5 Assessment https://marian.instructure.com/courses/729026/assignments/50196182	due by 11:59pm
Wed May 14, 2025	<input type="checkbox"/> Discuss: Special Senses (Initial posts due on Wednesdays) https://marian.instructure.com/courses/729026/assignments/50196059	due by 11:59pm
Fri May 16, 2025	<input type="checkbox"/> PowerPhys: Action Potentials Lab https://marian.instructure.com/courses/729026/assignments/50196105	due by 11:59pm
	<input type="checkbox"/> Submit Chapter 10: Adaptive Practice https://marian.instructure.com/courses/729026/assignments/50196117	due by 11:59pm

Date	Details	Due
	<input type="checkbox"/> Submit Chapter 7: Adaptive Practice https://marian.instructure.com/courses/729026/assignments/50196155	due by 11:59pm
	<input type="checkbox"/> Submit Chapter 9: Adaptive Practice https://marian.instructure.com/courses/729026/assignments/50196157	due by 11:59pm
Sun May 18, 2025	<input type="checkbox"/> Submit: The Nervous System Article Summary Assignment https://marian.instructure.com/courses/729026/assignments/50196166	due by 11:59pm
	<input type="checkbox"/> Take: Chapter 10 Assessment https://marian.instructure.com/courses/729026/assignments/50196168	due by 11:59pm
	<input type="checkbox"/> Take: Chapter 7 Assessment https://marian.instructure.com/courses/729026/assignments/50196183	due by 11:59pm
	<input type="checkbox"/> Take: Chapter 9 Assessment https://marian.instructure.com/courses/729026/assignments/50196184	due by 11:59pm
Wed May 21, 2025	<input type="checkbox"/> Discuss: Umbilical Cord Blood (Initial posts due on Wednesdays) https://marian.instructure.com/courses/729026/assignments/50196058	due by 11:59pm
	<input type="checkbox"/> Submit Chapter 14: Adaptive Practice https://marian.instructure.com/courses/729026/assignments/50196124	due by 11:59pm
	<input type="checkbox"/> Submit Chapter 15: Adaptive Practice https://marian.instructure.com/courses/729026/assignments/50196127	due by 11:59pm
	<input type="checkbox"/> Submit Chapter 16: Adaptive Practice https://marian.instructure.com/courses/729026/assignments/50196130	due by 11:59pm
Fri May 23, 2025	<input type="checkbox"/> PowerPhys: Effect of Exercise on Cardiac Output Lab https://marian.instructure.com/courses/729026/assignments/50196108	due by 11:59pm
	<input type="checkbox"/> PowerPhys: Hematocrit and Hemoglobin Concentration and Blood Typing Lab https://marian.instructure.com/courses/729026/assignments/50196111	due by 11:59pm
	<input type="checkbox"/> PowerPhys: Recruitment and Isotonic and Isometric Contractions Lab https://marian.instructure.com/courses/729026/assignments/50196114	due by 11:59pm
	<input type="checkbox"/> Submit Chapter 11: Adaptive Practice https://marian.instructure.com/courses/729026/assignments/50196119	due by 11:59pm
Sat May 24, 2025	<input type="checkbox"/> Take: Lab Exam 1 https://marian.instructure.com/courses/729026/assignments/50196056	due by 11:59pm
Sun May 25, 2025	<input type="checkbox"/> Submit: Muscle Article Summary Assignment https://marian.instructure.com/courses/729026/assignments/50196165	due by 11:59pm
	<input type="checkbox"/> Take: Chapter 11 Assessment https://marian.instructure.com/courses/729026/assignments/50196169	due by 11:59pm
	<input type="checkbox"/> Take: Chapter 14 Assessment https://marian.instructure.com/courses/729026/assignments/50196171	due by 11:59pm

Date	Details	Due
	<input type="checkbox"/> Take: Chapter 15 Assessment https://marian.instructure.com/courses/729026/assignments/50196172	due by 11:59pm
	<input type="checkbox"/> Take: Chapter 16 Assessment https://marian.instructure.com/courses/729026/assignments/50196173	due by 11:59pm
Wed May 28, 2025	<input type="checkbox"/> Discuss: Acid Base Balance (Initial posts due on Wednesdays) https://marian.instructure.com/courses/729026/assignments/50196057	due by 11:59pm
	<input type="checkbox"/> PowerPhys: Acid-Base Balance Lab https://marian.instructure.com/courses/729026/assignments/50196103	due by 11:59pm
	<input type="checkbox"/> PowerPhys: Homeostatic Imbalances of Thyroid Function Lab https://marian.instructure.com/courses/729026/assignments/50196113	due by 11:59pm
	<input type="checkbox"/> PowerPhys: Respiratory Volumes Lab https://marian.instructure.com/courses/729026/assignments/50196115	due by 11:59pm
Fri May 30, 2025	<input type="checkbox"/> Submit Chapter 13: Adaptive Practice https://marian.instructure.com/courses/729026/assignments/50196121	due by 11:59pm
	<input type="checkbox"/> Submit Chapter 17: Adaptive Practice https://marian.instructure.com/courses/729026/assignments/50196132	due by 11:59pm
	<input type="checkbox"/> Submit Chapter 18: Adaptive Practice https://marian.instructure.com/courses/729026/assignments/50196134	due by 11:59pm
	<input type="checkbox"/> Submit Chapter 19: Adaptive Practice https://marian.instructure.com/courses/729026/assignments/50196136	due by 11:59pm
	<input type="checkbox"/> Submit: Endocrine OR Immune System Article Summary Assignment https://marian.instructure.com/courses/729026/assignments/50196163	due by 11:59pm
	<input type="checkbox"/> Take: Chapter 13 Assessment https://marian.instructure.com/courses/729026/assignments/50196170	due by 11:59pm
Sun Jun 1, 2025	<input type="checkbox"/> Take: Chapter 17 Assessment https://marian.instructure.com/courses/729026/assignments/50196174	due by 11:59pm
	<input type="checkbox"/> Take: Chapter 18 Assessment https://marian.instructure.com/courses/729026/assignments/50196175	due by 11:59pm
	<input type="checkbox"/> Take: Chapter 19 Assessment https://marian.instructure.com/courses/729026/assignments/50196176	due by 11:59pm
	<input type="checkbox"/> PowerPhys: Blood Glucose Regulation Lab https://marian.instructure.com/courses/729026/assignments/50196106	due by 11:59pm
Fri Jun 6, 2025	<input type="checkbox"/> Submit Chapter 21: Adaptive Practice https://marian.instructure.com/courses/729026/assignments/50196142	due by 11:59pm
	<input type="checkbox"/> Submit Chapter 23: Adaptive Practice https://marian.instructure.com/courses/729026/assignments/50196144	due by 11:59pm
Sat Jun 7, 2025	<input type="checkbox"/> Submit: Digestive OR Reproductive Systems Article Summary Assignment https://marian.instructure.com/courses/729026/assignments/50196162	due by 11:59pm

Date	Details	Due
	§, Take: Chapter 21 Assessment (https://marian.instructure.com/courses/729026/assignments/50196178)	due by 11:59pm
	§, Take: Chapter 23 Assessment (https://marian.instructure.com/courses/729026/assignments/50196179)	due by 11:59pm
	§, Take: Final Exam (https://marian.instructure.com/courses/729026/assignments/50196185)	due by 11:59pm
	%J Take: Lab Exam 2 (https://marian.instructure.com/courses/729026/assignments/50196055)	due by 11:59pm
	§, Final Exam: Version 2 (https://marian.instructure.com/courses/729026/assignments/50196081)	
	§, Module 1 Self-Assessment (https://marian.instructure.com/courses/729026/assignments/50196085)	
	§, Module 2 Self-Assessment (https://marian.instructure.com/courses/729026/assignments/50196087)	
	§, Module 3 Self-Assessment (https://marian.instructure.com/courses/729026/assignments/50196089)	
	§, Module 4 Self-Assessment (https://marian.instructure.com/courses/729026/assignments/50196091)	
	§, Module 5 Self-Assessment (https://marian.instructure.com/courses/729026/assignments/50196093)	
	§, Module 6 Self-Assessment (https://marian.instructure.com/courses/729026/assignments/50196095)	
	§, Module 7 Self-Assessment (https://marian.instructure.com/courses/729026/assignments/50196098)	
	§, Module 8 Self-Assessment (https://marian.instructure.com/courses/729026/assignments/50196101)	