straighterline

Syllabus

BIO202L | **Anatomy & Physiology II Lab**

Course Text

Custom Lab Kit–Sold Separately

This course requires lab kit SI-11077-AP-01 from Science Interactive for $220 (plus shipping).

Students also planning to enroll in the Anatomy & Physiology I Lab course (BIO201L) can save money by purchasing a combined lab kit, SI-11048-AP-01, for $340 (plus shipping).

Course Description

Building on Anatomy & Physiology I Lab, this lab-only course is designed as a standalone addition to the Anatomy & Physiology II course. Students will complete at-home laboratory experiments, track and record results, answer lab-based questions reflected in graded lab reports, and complete lab-based assessments to meet the lab requirement. The labs are provided by Science Interactive, a leading provider of at home lab kits and online lab instructional materials and resources.

Learning Outcomes

After completing this course, students will be able to:

1. Explain the structure and physiology of the heart
2. Describe the structures and functions of the circulatory system
3. Explain the regulation of blood pressure
4. Describe the structures and functions of the lymphatic system
5. Describe the structures and functions of the respiratory system
6. Describe the structures and physiology of the digestive system
7. Explain nutrition and the dietary composition of foods
8. Describe the anatomy and physiology of the urinary system
9. Explain water, electrolyte, and acid-base balance in the body
10. Explain the structures and functions of the reproductive systems

Course Prerequisites

It is suggested, though not required, that students take Anatomy & Physiology I and Anatomy & Physiology I Lab or its equivalent before enrolling in Anatomy & Physiology II Lab. We also recommend concurrent enrollment in Anatomy & Physiology II (BIO202).

Academic Integrity Statement

Academic integrity is the pursuit of scholarly activity in an honest, truthful and responsible manner. Violations of academic integrity include, but are not limited to, plagiarism, cheating, fabrication and academic misconduct. Failure to comply with the Academic Integrity Policy can result in a failure and/or zero on the attempted assignment/examination, a removal from the course, disqualification to enroll in future courses, and/or revocation of an academic transcript.

Course Completion Policy

In order for a course to be considered complete, **all required coursework must be attempted, submitted, and graded.** Required coursework consists of graded assignments. Any Academic Integrity Policy violations may prevent a course from being considered complete.

Assessment Types

StraighterLine courses may include any combination of the assessment types described below. Review the descriptions to learn about each type, then review the Course Evaluation Criteria to understand how your learning will be measured in this course.

Benchmarks

Benchmarks test your mastery of course concepts. You have 3 attempts, and your highest score counts.
Note: Cumulative Benchmarks (final exams) only allow 1 attempt.

Capstones

Capstones are project-based assessments that help you apply concepts to real-world scenarios. You have 2 attempts, and your highest score counts.

Checkpoints

Checkpoints are quick knowledge checks on important course concepts. All are open-book, and most have 1-3 attempts.

AI Use-Case Policies

StraighterLine Capstone assessments operate under one of three AI Use-Case Policies. These designations are selected intentionally to support learners in developing digital literacy, ethical reasoning, and authentic communication skills. Each model requires students to engage meaningfully with the course outcomes while adhering to academic standards.

Independent Work Requirement: Capstones with this designation must be completed independently without using AI tools. The goal is for learners to showcase their own understanding and skills without AI assistance. Students are expected to generate and submit original work developed solely through their own reasoning and effort.

AI-Assisted Planning Option: Capstones with this designation may allow AI tools to support brainstorming and assessment planning. If allowed, students will be asked to document any AI assistance by noting how it informed their work. Documentation must be included within the assignment or in a designated reflection field. Examples include describing how an AI tool helped organize an outline, generate ideas, or surface sources for further exploration.

AI-Integration Requirement: Capstones with this designation require AI tools as part of the learning process. Students will be asked to reflect upon their AI interactions and AI contributions to the assessment. Reflections must include which tools were used, how they were used, and what insights students gained from the process. This promotes transparency, ethical use, and metacognitive skill-building.

Course Evaluation Criteria

Your score provides a percentage score and letter grade for each course. A passing percentage is 70% or higher.

There are a total of 1000 points in the course:

Assessment	Points	Learning Outcomes
Checkpoint 1: Getting Started	2	N/a
Checkpoint 2: Lab Safety	2	N/a
Checkpoint 3: Using the V-Scope	3	N/a
Checkpoint 4: Lab Kit Inventory	3	N/a
Capstone 1: Anatomy of the Respiratory System	90	5
Capstone 2: Blood Vessels and the Heart	90	1, 2, 3
Capstone 3: Blood	90	2
Capstone 4: Electrolytes and Acid-Base Balance	90	9
Capstone 5: Nutrition	90	7
Capstone 6: Physiology of the Respiratory System	90	5
Capstone 7: The Digestive System	90	6
Capstone 8: The Lymphatic System	90	4
Capstone 9: The Reproductive System	90	10
Capstone 10: The Urinary System	90	8
Capstone 11: Urinalysis	90	8, 9
Total	**1000**	

Course Roadmap

This roadmap provides an overview of the checkpoints and lessons covered in this course.

Checkpoint 1: Getting Started

- The Science Interactive Cloud
- Exploration, Experimentation, and Evaluation
- Science Interactive Resources

Checkpoint 2: Lab Safety

- Safety guidelines for using Science Interactive lab kits
- Terms associated with common laboratory safety equipment

Checkpoint 3: Using the V-Scope

- Purpose and function of the SI V-Scope
- Controls of the SI V-Scope
- SI V-Scope selection, visibility, download, and reference of slides
- Special rules for using the SI V-Scope in microscopy

Checkpoint 4: Lab Kit Inventory

- Kit contents list
- Reviewing your Science Interactive kit

Capstone 1: Anatomy of the Respiratory System

- Structures of the upper and lower respiratory tracts
- Microscopic structures of the respiratory system
- Pulmonary ventilation, inspiration, and expiration

Capstone 2: Blood Vessels and the Heart

- Cardiac muscle, atrium, ventricle, vena cava, and aorta
- Blood flow through the heart, pulmonary, and systemic circuits
- Histology of cardiac muscle tissue, arteries, and veins

Capstone 3: Blood

- Composition of human blood
- Erythrocyte, leukocyte, plasma, and platelet
- Blood typing and antigen testing for ABO and Rh blood type classifications

Capstone 4: Electrolytes and Acid-Base Balance

- Acid, base, electrolyte, and buffer
- Roles of electrolytes in the human body
- Function of acid-base buffering systems

Capstone 5: Nutrition

- Nutrition, macronutrient, micronutrient, and kilocalorie
- How carbohydrates, proteins, lipids, vitamins, and minerals are utilized by the body
- How resting daily energy expenditure (RDEE) and total daily energy expenditure (TDEE) are calculated

Capstone 6: Physiology of the Respiratory System

- Partial pressure, internal respiration, inspiration, and expiration
- How asthma and COPD negatively affect pulmonary function
- How spirometry is used to measure respiration

Capstone 7: The Digestive System

- Structure and function of digestive system organs
- Histology of gastrointestinal and pancreatic tissues
- Enzymes' influence on digestion

Capstone 8: The Lymphatic System

- Lymphatic system, lymph, lymphocyte, and lymph node
- How lymphocytes remove foreign particles from the body
- Functions of lymphatic system structures

Capstone 9: The Reproductive System

- Structures of the male and female reproductive system
- Histology of the testis and ovary

Capstone 10: The Urinary System

- Structure and function of urinary system organs
- Processes of filtration, absorption, and secretion that occur in the nephron
- Histology of the renal medulla, renal cortex, and bladder

Capstone 11: Urinalysis

- Formation and composition of urine
- How urinalysis parameters relate to the health of an individual

Related Courses

BIO202
Anatomy and Physiology II
View Course →

PHARM103
Pharmacology
View Course →

PSY101
Introduction to Psychology
View Course →