

ANATOMY & PHYSIOLOGY (ANAT&PHY)

ANAT&PHY 235 – HUMAN PHYSIOLOGY AND HEALTH

4 credits.

Learn basic physiological concepts, apply them to understand human health and disease, and link them to broader core concepts in biology. Complete a project that applies conceptual understanding of general biology and physiology to investigate and create informational materials for the public about a disease or health promotion strategy. The foundational knowledge covered serves those interested in health sciences majors, as well as non-science students interested in life-long health.

Requisites: None

Course Designation: Breadth - Biological Sci. Counts toward the Natural Sci req

Level - Elementary

L&S Credit - Counts as Liberal Arts and Science credit in L&S

Repeatable for Credit: No

Last Taught: Spring 2025

Learning Outcomes: 1. Demonstrate basic knowledge of the function of human organ systems

Audience: Undergraduate

2. Demonstrate knowledge of biology core concepts and use them to contextualize and understand physiological processes and organ system function in humans

Audience: Undergraduate

3. Define the components of physiological feedback systems and explain the fundamental role that feedback systems play in regulating physiological processes

Audience: Undergraduate

4. Apply knowledge of organ systems and their regulation to explain the integration of functions across systems at the organismal level - homeostasis

Audience: Undergraduate

5. Apply knowledge of human physiology to understand the human condition in health and disease

Audience: Undergraduate

6. Demonstrate ability to critically read and apply scientific information in daily life

Audience: Undergraduate

ANAT&PHY 335 – PHYSIOLOGY

5 credits.

Core concepts in human physiology from cells to organ-systems via online lectures and active learning activities including laboratory experiments. Topics include homeostasis, membrane transport, cellular physiology, regulation of metabolism, and functions of the nervous, endocrine, muscular, reproductive, cardiovascular, respiratory, renal, and gastrointestinal system.

Requisites: Sophomore standing, (ZOOLOGY/BIOLOGY 101, BOTANY/BIOLOGY 130, ZOOLOGY/BIOLOGY/BOTANY 151, ZOOLOGY 153 or BIOCORE 381) and (CHEM 103, 108, 109 or 115), or graduate/professional standing. Not open to students with credit for PHYSIOL 435 or ANAT&PHY 435

Course Designation: Breadth - Biological Sci. Counts toward the Natural Sci req

Level - Intermediate

L&S Credit - Counts as Liberal Arts and Science credit in L&S

Repeatable for Credit: No

Last Taught: Spring 2025

Learning Outcomes: 1. Demonstrate knowledge of the basic functions of the major human organ systems, from the cellular level to the whole organism.

Audience: Undergraduate

2. Describe why homeostasis is a central theme of physiology and how it relates to the function of each human organ system.

Audience: Undergraduate

3. Integrate knowledge of how organ systems interact to regulate physiological processes in order to maintain homeostasis.

Audience: Undergraduate

4. Apply knowledge of physiology to predict outcomes, and justify those predictions, when homeostasis is not maintained due to disease or experimental manipulation.

Audience: Undergraduate

5. Develop critical and scientific thinking skills through the application of physiology knowledge in preparation for real-world situations and further educational settings.

Audience: Undergraduate

6. Demonstrate effective collaboration and communicate with peers to achieve shared outcomes.

Audience: Undergraduate

ANAT&PHY 337 – HUMAN ANATOMY

3 credits.

Uses a regional approach to provide a foundation of knowledge in human anatomy. Units cover an introduction to anatomical systems; back and limbs; thorax, abdomen, and pelvis; and head and neck.

Requisites: Not open to first-year freshman students

Course Designation: Breadth - Biological Sci. Counts toward the Natural Sci req

Level - Intermediate

L&S Credit - Counts as Liberal Arts and Science credit in L&S

Repeatable for Credit: No

Last Taught: Spring 2025

Learning Outcomes: 1. Demonstrate a thorough understanding of the anatomy of the human body

Audience: Undergraduate

2. Explain how structure governs function in the human body

Audience: Undergraduate

3. Describe how systems work together in normal function

Audience: Undergraduate

4. Discuss how anatomy can contribute to dysfunction or pathology

Audience: Undergraduate

5. Use anatomical terminology when discussing the human body

Audience: Undergraduate

6. Describe key transformative features occurring in the human body throughout the lifespan

Audience: Undergraduate

7. Apply anatomical knowledge to reason through clinical scenarios

Audience: Undergraduate

ANAT&PHY 338 – HUMAN ANATOMY LABORATORY

2 credits.

Takes a regional approach to cover the gross anatomy of the human body in four units: introduction to anatomical systems; back and limbs; thorax, abdomen, and pelvis; and head and neck. A variety of tools, including interactive software, models, and specimens, will be used.

Requisites: ANAT&PHY 337 (KINES 337 before fall 2018), or KINES 328, or concurrent enrollment

Course Designation: Breadth - Biological Sci. Counts toward the Natural Sci req

Level - Intermediate

L&S Credit - Counts as Liberal Arts and Science credit in L&S

Repeatable for Credit: No

Last Taught: Spring 2025

Learning Outcomes: 1. Identify key structures of the human body, including muscles, organs, and bones, and their characteristics

Audience: Undergraduate

2. Explain how structure governs function

Audience: Undergraduate

3. Recognize how structures work together in normal function

Audience: Undergraduate

4. Use anatomical terminology in communication with others in the health field

Audience: Undergraduate

5. Apply anatomical knowledge and identification skills in preparation for practice as a clinician in a variety of health fields

Audience: Undergraduate

ANAT&PHY 399 – INDEPENDENT STUDY

1-3 credits.

Individual work in the fields of anatomy and/or physiology offers the opportunity to participate in more in-depth study (beginning to intermediate level) under the direct guidance of anatomy and/or physiology faculty.

Requisites: Consent of instructor

Course Designation: Level - Intermediate

L&S Credit - Counts as Liberal Arts and Science credit in L&S

Repeatable for Credit: Yes, unlimited number of completions

Last Taught: Spring 2025

Learning Outcomes: 1. Express basic knowledge of content, analyze related data and apply knowledge in a variety of academic settings.

Audience: Undergraduate

ANAT&PHY 435 – FUNDAMENTALS OF HUMAN PHYSIOLOGY

5 credits.

Explores the major organ systems including nervous, endocrine, muscular, cardiovascular, renal, and gastrointestinal. The main learning objective is an understanding of the cellular and molecular mechanisms through which homeostasis is integrated and maintained. Not open to students with credit for PHYSIOL 335 or 435 prior to fall 2018 or ANAT&PHY 335

Requisites: Junior standing, (ZOOLOGY/BIOLOGY 101, BOTANY/BIOLOGY 130, ZOOLOGY/BIOLOGY/BOTANY 151, ZOOLOGY 153, or BIOCORE 381), (CHEM 103, 108, 109, or 115) and (PHYSICS 103, 201, or 207) or graduate/professional standing

Course Designation: Breadth - Biological Sci. Counts toward the Natural Sci req

Level - Advanced

L&S Credit - Counts as Liberal Arts and Science credit in L&S

Repeatable for Credit: No

Last Taught: Spring 2025

Learning Outcomes: 1. Describe and illustrate the physiological mechanisms within a human body

Audience: Undergraduate

2. Explain how the organs and their functional units work together as a system within the human body

Audience: Undergraduate

3. Explain how human homeostasis is maintained by a contribution from each organ system and understand what has gone wrong in the illustrative pathophysiological situations

Audience: Undergraduate

ANAT&PHY 699 – INDEPENDENT STUDY

1-3 credits.

Individual work in the fields of anatomy and/or physiology will offer the opportunity to participate in more in-depth study (advanced level) under the direct guidance of anatomy and/or physiology faculty.

Requisites: Consent of instructor

Course Designation: Level - Advanced

L&S Credit - Counts as Liberal Arts and Science credit in L&S

Repeatable for Credit: Yes, unlimited number of completions

Last Taught: Spring 2024

Learning Outcomes: 1. Express advanced knowledge of content, analyze related data and apply knowledge in a variety of academic settings.

Audience: Undergraduate