

Anatomy & Physiology

SCI-2100

2022 07/01/2022 to 06/30/2023 Modified 04/22/2022

Course Description

Anatomy and Physiology will explore the structures and function of the human body. Emphasis will be placed on orientation, organization, and body systems. Body systems covered will include integumentary, skeletal, cardiovascular, muscular, lymphatic, respiratory, urinary, reproductive, digestive, and nervous.

Rationale

The study of anatomy allows students the opportunity to see first-hand how complex systems and structures of the human body support the existence of a divine creator. By developing an understanding of how the human body has been created, students can better understand how the body is made of interrelated systems used to sustain the body as a whole. Understanding the parts of the human body also allows the student to apply their knowledge to real world situations.

Prerequisite

Course waiver signed by the student if the student is over 18 years of age. If the student is under 18 years old the waiver will be signed by a parent or legal guardian.

SCI1000 Biology; minimum grade of 75%

Measurable Learning Outcomes

- A. The student will use scientific methods and equipment to plan, conduct, and analyze laboratory and field investigations about human anatomy and physiology.
- B. The student will analyze, evaluate, make inferences, and predict trends from data.
- C. The student will communicate valid conclusions supported by the data through various methods.
- D. The student will investigate and understand the organization of the human body.
- E. The student will investigate and understand the chemical and biochemical processes essential for human life.
- F. The student will investigate and understand cell histology.
- G. The student will understand the purpose and anatomical features of the integumentary system, the skeletal system, the muscular system, the nervous system including special senses, the endocrine system, the circulatory system, the lymphatic system and immunity, the respiratory system, the digestive system, the urinary system, and the reproductive system.
- H. The student will explain the interrelationships between the anatomical systems of the human body.

Biblical Integration Outcomes

- A. The student will demonstrate an understanding of a biblical worldview as it relates to the human anatomy.
- B. The student will investigate and understand biblical interpretation of the sanctity of life. (Psalms 139:15-16)
- C. The student will compare anatomical teachings to metaphors found in Scripture. (1 Corinthians 12:27)

D. The student will produce assignments that provide real-life applications to anatomy and careers that are influenced by anatomy. (Colossians 3:23-24)

E. The student will research and discuss ethical issues in the medical field. (Deuteronomy 6:24-25)

Course Resources

See LUOA's [Systems Requirements](#) for computer specifications necessary to operate LUOA curriculum. Also view [Digital Literacy Requirements](#) for LUOA's expectation of users' digital literacy.

This course makes use of third-party digital resources to enhance the learning experience. LUOA staff and faculty have curated these resources. Students can safely access them to complete coursework. Please ensure that internet browser settings, pop-up blockers, and other filtering tools allow for these resources to be accessed. See Technologies and Resources Used in this Course below for a specific list.

- Note: Embedded YouTube videos may be utilized to supplement LUOA YouTube videos are the property of the respective content creator, licensed to YouTube for distribution and user access. As a non-profit educational institution, LUOA is able to use YouTube video content under the YouTube Terms of Service. For additional information on copyright, please contact the [Jerry Falwell Library](#).

Scripture Attribution

- All Scripture quotations, unless otherwise indicated, are from the ESV® Bible (The Holy Bible, English Standard Version®), copyright © 2001 by Crossway, a publishing ministry of Good News Used by permission. All rights reserved.

Technologies and Resources Used in this Course

The following resource(s) are used throughout this course:

- Embedded LUOA lab videos

Policies

Students are accountable for all information in the [Student Handbook \(https://www.liberty.edu/online-academy/wp-content/uploads/2021/11/LUOA-Student-Handbook.pdf\)](https://www.liberty.edu/online-academy/wp-content/uploads/2021/11/LUOA-Student-Handbook.pdf). Below are a few policies that have been highlighted from the Student Handbook.

Course Grading Policies

The student's grades will be determined according to the following grading scale and assignment weights. The final letter grade for the course is determined by a 10-point scale. Assignments are weighted according to a tier system, which can be referenced on the Grades page in Canvas. Each tier is weighted according to the table below. Items that do not affect the student's grade are found in Tier 0.

Grading Scale		Assignment Weights	
A	90-100%	Tier 0	0%
B	80-89%	Tier 1	25%
C	70-79%	Tier 2	35%
D	60-69%	Tier 3	40%
F	0-59%		

In order for students to receive credit for a course, the following conditions have to be met:

- All semester exams and module tests have to be completed.
- All Tier 3 projects or papers have to be completed.
- Fewer than 10 zeros exist in the gradebook for blank submissions in a full credit course and 5 zeros for blank submissions in a semester course.

Types of Assessments

To simplify and clearly identify which policies apply to which assessment, each assessment has been categorized into one of four categories: Lesson, Assignment, Quiz, or Test. Each applicable item on the course Modules page has been designated with an identifier chosen from among these categories. Thus, a Quiz on the American Revolution may be designated by the title, "1.2.W - Quiz: The American Revolution." These identifiers were placed on the Modules page to help students understand which Resubmission and Honor Code policies apply to that assessment (see the Resubmission Policy and Honor Code Policy below for further details).

- **Lesson:** *Any item on the Modules page designated as a "Lesson"*

These include instructional content and sometimes an assessment of that content. Typically, a Lesson will be the day-to-day work that a student completes.

- **Assignment:** *Any item on the Modules page designated as an "Assignment"*

Typical examples of Assignments include, but are not limited to, papers, book reports, projects, labs, and speeches. Assignments are usually something that the student should do his or her best work on the first time.

- **Quiz:** *Any item on the Modules page designated as a "Quiz"*

This usually takes the form of a traditional assessment where the student will answer questions to demonstrate knowledge of the subject. Quizzes cover a smaller amount of material than Tests.

- **Test:** *Any item on the Modules page designated as a "Test"*

This usually takes the form of a traditional assessment where the student will answer questions to demonstrate knowledge of the subject. Tests cover a larger amount of material than Quizzes.

Resubmission Policy

Students are expected to submit their best work on the first submission for every Lesson, Assignment, Quiz, and Test. However, resubmissions may be permitted in the following circumstances:

- **Lesson:** Students are automatically permitted two attempts on a Lesson. Students may freely resubmit for their first two attempts without the need for teacher approval.
- **Assignment:** Students should do their best work the first time on all Assignments. However, any resubmissions must be completed before the student moves more than one module ahead of that Assignment. For example, a student may resubmit an Assignment from Module 3 while in Module 4, but not an Assignment from Modules 1 or 2. High School students may not resubmit an Assignment without expressed written permission from the teacher in a comment.
- **Quiz:** Students may NOT resubmit for an increased grade.
- **Test:** Students may NOT resubmit for an increased grade.

If a student feels that he or she deserves a resubmission on a Lesson, Assignment, Quiz, or Test due to a technical issue such as a computer malfunction, the student should message his or her teacher to make the request.

Honor Code Policy

Every time a student violates the Honor Code, the teacher will submit an Honor Code Incident Report. The Student Support Coordinator will review the incident and allocate the appropriate consequences. Consequences, which are determined by the number of student offenses, are outlined below:

- **Warning:** This ONLY applies to high school Lessons and elementary/middle school Assignments and Lessons. Students should view these actions as learning opportunities.
 - **Lessons:** A zero will be assigned for the question only.

- **Elementary/Middle School Assignment:** The student must redo his or her work; however, the student may retain his or her original grade.
- **1st Offense:**
 - **Lesson, Quiz, or Test:** The student will receive a 0% on the entire assessment.
 - **Assignment:** The student will either:
 - Receive a 0% on the original assignment
 - Complete the Plagiarism Workshop
 - Retry the assignment for a maximum grade of 80%
- **2nd Offense:** The student will receive a 0% and be placed on academic probation.
- **3rd Offense:** The student will receive a 0% and the Director of Faculty will determine the consequences that should follow, possibly including withdrawal from the course or expulsion from the academy.

Materials Selection Policy

LUOA curates educational materials that are consistent with the school's philosophy; however, the fallen human condition depicted in literature (as in Scripture itself) is not always pleasant. Valuable works sometimes have objectionable or profane elements. Good books provide four (4) recognized values.

- They build godly attitudes and character traits.
- They deepen our social and cultural awareness.
- They strengthen our use of written language.
- They provide a lifelong source of enjoyment and relaxation.

In order to instill these values in students and fulfill the stated objectives of the school, all LUOA students are expected to read and study good books on a regular basis. Recognizing that materials designed for one level may not be appropriate for another, three (3) levels of criteria are applied:

- Elementary materials must contain no objectionable material,
- Objectionable elements in sixth through eighth-grade materials must be limited and must serve a specific educational purpose, and
- Objectionable content may be included in high school materials but must be outweighed by positive literary, curricular, and/or Christian values.

The curriculum department has approved required educational materials for students.

Schedule

Module 1: Foundational Concepts of Anatomy and Physiology

Week 1: Major Concepts and Language of Anatomy

Week 2: Basics of Biochemistry

Module 2: Cells and Tissues

Week 3: Cellular Level of Organization

Week 4: Tissue Level of Organization

Week 5: Integumentary System

Module 3: Skeletal System

Week 6: Skeletal System

Week 7: Bones of the Skeletal System Part 1

Week 8: Bones of the Skeletal System Part 2

Week 9: 1st Quarter Review & Test

Module 4: Muscular System

Week 10: Muscle Physiology

Week 11: Muscles of the Trunk

Week 12: Muscles of the Limbs

Week 13: Muscles of the Forearm

Module 5: Skull, Brain, Nervous System

Week 14: Parts Pertaining to Nervous System

Week 15: Nervous System

Module 6: Facial Muscles and Special Senses

Week 16: Facial Muscles and Eye

Week 17: Ear and Chemical Senses

Week 18: 2nd Quarter Review & Test

Module 7: Endocrine System

Week 19: Hormones & Glands

Week 20: Hormones & Health

Module 8: Blood, Lymphatic System, and Immunity

Week 21: Blood and the Lymphatic System

Week 22: Immunity

Module 9: Cardiovascular System

Week 23: Cardiovascular System

Week 24: Cardiac Connections and Their Importance

Module 10: Respiratory System

Week 25: Respiratory System

Week 26: Lung Cancer

Week 27: 3rd Quarter Review & Test

Module 11: Digestive System

Week 28: Digestive System

Week 29: Blood Supply and Disorders of the Digestive System

Module 12: Urinary System

Week 30: Urinary System

Week 31: Urine Composition and Disorders

Module 13: Reproductive System

Week 32: Female Reproductive System

Week 33: Male Reproductive System

Week 34: Pregnancy, Growth, and Development

Week 35: Labor & Delivery and Neonatal Period

Week 36: 4th Quarter Review & Test
