

**ANAT 40 Course Outline as of Fall 2020****CATALOG INFORMATION**

Dept and Nbr: ANAT 40 Title: INTRO TO ANAT AND PHYSIO

Full Title: Introduction to Human Anatomy and Physiology

Last Reviewed: 10/14/2019

Units		Course Hours per Week		Nbr of Weeks	Course Hours Total	
Maximum	4.00	Lecture Scheduled	3.00	17.5	Lecture Scheduled	52.50
Minimum	4.00	Lab Scheduled	3.00	17.5	Lab Scheduled	52.50
		Contact DHR	0		Contact DHR	0
		Contact Total	6.00		Contact Total	105.00
		Non-contact DHR	0		Non-contact DHR	0

Total Out of Class Hours: 105.00

Total Student Learning Hours: 210.00

Title 5 Category: AA Degree Applicable

Grading: Grade Only

Repeatability: 00 - Two Repeats if Grade was D, F, NC, or NP

Also Listed As:

Formerly: ANAT 70

**Catalog Description:**

Introductory course in human anatomy and physiology. Covers the structure and function of all organ systems of the body. Meets general education requirement. (Intended for pre-paramedic students.)

**Prerequisites/Corequisites:****Recommended Preparation:**

Completion of HLC 160 and CHEM 60, and eligibility for ENGL 100 or ESL 100 or equivalent

**Limits on Enrollment:****Schedule of Classes Information:**

Description: Introductory course in human anatomy and physiology. Covers the structure and function of all organ systems of the body. Meets general education requirement. (Intended for pre-paramedic students.) (Grade Only)

Prerequisites/Corequisites:

Recommended: Completion of HLC 160 and CHEM 60, and eligibility for ENGL 100 or ESL 100 or equivalent

Limits on Enrollment:

Transfer Credit: CSU;UC.

Repeatability: Two Repeats if Grade was D, F, NC, or NP

## **ARTICULATION, MAJOR, and CERTIFICATION INFORMATION:**

<b>AS Degree:</b>	<b>Area</b>		Effective:	Inactive:
	C	Natural Sciences	Spring 2007	
<b>CSU GE:</b>	<b>Transfer Area</b>		Effective:	Inactive:
	B2	Life Science	Spring 2007	
	B3	Laboratory Activity		
<b>IGETC:</b>	<b>Transfer Area</b>		Effective:	Inactive:
	5B	Biological Sciences	Spring 2007	
	5C	Fulfills Lab Requirement		
<b>CSU Transfer:</b>	Transferable	Effective:	Spring 2007	Inactive:
<b>UC Transfer:</b>	Transferable	Effective:	Spring 2007	Inactive:

**CID:**

**Certificate/Major Applicable:**

Both Certificate and Major Applicable

## **COURSE CONTENT**

### **Student Learning Outcomes:**

At the conclusion of this course, the student should be able to:

1. Describe the structure and function of the major tissues, organs, and systems of the human body.
2. Apply core concepts of anatomy and physiology to understanding the basis for some common medical conditions.

### **Objectives:**

Students will be able to:

1. Describe the scientific method and apply this knowledge to the course content; differentiate the scientific method from other modes of knowing.
2. Relate basic chemical concepts and cell structure to the function of organs.
3. Name the organ systems, identify the major organs, and describe their functions.
4. Summarize the structures and functions necessary to accomplish movement of the body.
5. Compare how body-wide communication is accomplished by the nervous and endocrine systems.
6. Name the factors essential for life, and describe how they are supplied, transported, and regulated inside the body.
7. Compare the various structures and processes used for defense against injury and infection.
8. Describe human reproductive structures and mechanisms.
9. Apply core concepts of anatomy and physiology to understanding the basis for some common medical conditions.
10. Perform basic physiological measurements such as EKG and blood pressure.

### **Topics and Scope:**

## I. Introductory Concepts

### A. Scientific method

1. power and limits of scientific method
2. comparison of scientific method with other modes of learning
3. contributions of study of anatomy and physiology

### B. Levels of biological organization

### C. Human body plan, planes, cavities

### D. Anatomical terminology

### E. Homeostasis

1. negative feedback
2. regulated parameters

## II. Cells and Tissues: Structure and Function

### A. Macromolecules

### B. Organelles

### C. Cell membranes

1. passive transport
2. active transport

### D. Metabolism: energy and enzymes

### E. Tissues

## III. Support and Movement

### A. Integument

### B. Skeletal system

1. bones
2. joints

### C. Muscular system

1. muscles
2. muscle contraction

## IV. Control Systems

### A. Nervous system

1. neurons and synapses
2. general and special senses

### B. Endocrine system

1. endocrine glands
2. hormones

### C. Receptors, drugs, poisons

## V. Internal Environment

### A. Cardiovascular system

1. heart and blood vessels
2. regulation of cardiac function, blood pressure
3. formation of cardiac action potential and conduction

### B. Respiratory system

1. lungs, thoracic and pleural cavities
2. structure and function of conducting zone organs
3. respiratory gases
4. regulation of respiration and pH

### C. Urinary System

1. kidneys and nephrons
2. osmoregulation
3. regulation of blood pressure and pH

### D. Digestive system

1. gastrointestinal tract and accessory organs

2. digestion and glands
3. regulation of metabolism

## VI. Defense

- A. Blood
- B. Immune system
  1. organs, tissue, and cells
  2. inflammation
  3. specific immune response
  4. allergy, anaphylaxis, and immunization

## VII. Reproduction

- A. Male reproductive structures and functions
- B. Female reproductive structures and functions
- C. Gestation, parturition, and lactation

## VIII. Laboratory Exercises

A. All of the above mentioned structures will be studied by means of histological specimens, models, charts, and human cadavers or prosections in the anatomy section of course.

B. Physiological lab exercises will be performed on the following topics:

1. homeostasis
2. muscle contraction
3. reflex action
4. sensory receptor function
5. cardiac function
6. pulmonary function
7. renal function
8. acid base balance
9. glucose tolerance test
10. blood typing

## Assignment:

### Lecture-Related Assignments:

1. Weekly reading in text, 40-80 pages per week
2. Written homework assignments
3. Formal assessment: quizzes, 3 to 4 lab exams, 3 to 4 lecture exams, (including objective and essay questions), and final exam

### Laboratory-Related Assignments:

1. Written laboratory assignments (observation reports, diagrams, worksheets, etc.)

## Methods of Evaluation/Basis of Grade:

**Writing:** Assessment tools that demonstrate writing skills and/or require students to select, organize and explain ideas in writing.

Written homework, written laboratory assignments
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Writing 10 - 20%
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**Problem Solving:** Assessment tools, other than exams, that demonstrate competence in computational or non-computational problem solving skills.

Written laboratory assignments, written homework	Problem solving 10 - 20%
<b>Skill Demonstrations:</b> All skill-based and physical demonstrations used for assessment purposes including skill performance exams.	
None	Skill Demonstrations 0 - 0%
<b>Exams:</b> All forms of formal testing, other than skill performance exams.	
Lecture exams, lab exams, quizzes, final exam	Exams 60 - 80%
<b>Other:</b> Includes any assessment tools that do not logically fit into the above categories.	
Participation in lecture and lab	Other Category 0 - 5%

### **Representative Textbooks and Materials:**

Essentials Of Human Anatomy & Physiology. 12th ed. Marieb, Elaine and Keller, Suzanne. Pearson. 2018

Essentials of Anatomy & Physiology. 7th ed. Martini, Frederic and Bartholomew, Edwin. Pearson. 2016

Anatomy and Physiology for Emergency Care. 2nd ed. Martini, Frederic and Bartholomew, Edwin and Bledsoe, Bryan. Pearson. 2007 (classic)