

**PHYSIO 1 Course Outline as of Fall 1981****CATALOG INFORMATION**

Dept and Nbr: PHYSIO 1 Title: HUMAN PHYSIO

Full Title: Human Physiology

Last Reviewed: 5/8/2023

Units	Course Hours per Week		Nbr of Weeks		Course Hours Total	
Maximum	5.00	Lecture Scheduled	3.00	17.5	Lecture Scheduled	52.50
Minimum	5.00	Lab Scheduled	6.00	6	Lab Scheduled	105.00
		Contact DHR	0		Contact DHR	0
		Contact Total	9.00		Contact Total	157.50
		Non-contact DHR	0		Non-contact DHR	0

Total Out of Class Hours: 105.00

Total Student Learning Hours: 262.50

Title 5 Category: AA Degree Applicable

Grading: Grade or P/NP

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

Also Listed As:

Formerly:

**Catalog Description:**

Processes and mechanisms underlying the normal functioning systems such as neuromuscular, cardiovascular, digestive, renal, respiratory and reproductive. Selected examples of disturbances to the normal functioning of these systems will be considered and related to homeostatic mechanisms. Laboratory projects are conducted and designed to illustrate major principles of the aforementioned systems.

**Prerequisites/Corequisites:**

Chemistry 60, Biology 10 or equivalent with grade of "C" or better.

**Recommended Preparation:**

English 100B or 104, and Math 150B with a grade of "C" or better or their equivalents in college or high school.

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

Description: Process &amp; mechanisms underlying the normal functioning of the neuromuscular, cardiovascular, digestive, renal, respiratory &amp; reproductive systems. (Grade or P/NP)

Prerequisites/Corequisites: Chemistry 60, Biology 10 or equivalent with grade of "C" or better.

Recommended: English 100B or 104, and Math 150B with a grade of "C" or better or their equivalents in college or high school.

Limits on Enrollment:

Transfer Credit: CSU;UC. (CAN BIOL12)(PHYSIO 1+ANAT 1=BIOL SEQ B)

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	Fall 1981	
<b>CSU GE:</b>	<b>Transfer Area</b>		Effective:	Inactive:
	B2	Life Science	Fall 1981	
	B3	Laboratory Activity		
<b>IGETC:</b>	<b>Transfer Area</b>		Effective:	Inactive:
	5B	Biological Sciences	Fall 1981	
	5C	Fulfills Lab Requirement		

**CSU Transfer:** Transferable      Effective:      Fall 1981      Inactive:

**UC Transfer:** Transferable      Effective:      Fall 1981      Inactive:

### **CID:**

CID Descriptor:BIOL 120B      Human Physiology with Lab

SRJC Equivalent Course(s):      PHYZ1

### **Certificate/Major Applicable:**

Not Certificate/Major Applicable

## **COURSE CONTENT**

### **Outcomes and Objectives:**

The students will:

1. Explore the basic principles of physics and chemistry that serve to elucidate the mechanisms that govern the functions of the human body.
2. Learn how the systems (i.e. muscular, endocrine) function in health and disease.
3. Appreciate and comprehend the integrated functioning of multiple systems to maintain homeostasis.
4. Develop an understanding of scientific thinking and analysis to problems in human physiology.

### **Topics and Scope:**

1. Scientific Method.
  - A. critical thinking as a tool in understanding concepts in human physiology.
2. Definitiona of Physiology.
  - A. homeostasis
3. Cell Structure and Function.
4. Transport Mechanisms.

- A. diffusion and osmosis
- 5. Neurophysiology.
  - A. neuron structure membrane potentials, neurotransmitters and synaptic transmission
- 6. Central Nervous System.
  - A. brain and spinal cord function
- 7. Autonomic Nervous System.
  - A. pharmacology of drugs
- 8. Sensory Physiology.
  - A. receptors, modalities and pathways
- 9. Muscles.
  - A. microstructure and function, including reflexes
- 10. Cardiovascular Physiology.
  - A. blood and its functions
  - B. heart structure, cardiac cycle, electrophysiology and hemodynamics.
- 11. Respiratory Physiology.
  - A. Dynamics of airflow and gas exchange
- 12. Renal Physiology.
  - A. kidney structure, urine formation and pH balance
- 13. Acid-Base Balance.
  - A. blood and gases
- 14. Metabolism and Nutrition.
- 15. Digestive System.
- 16. Endocrinology.
  - A. Hormones, their mechanisms of action.
- 17. Immunity.
- 18. Reproduction.

**Assignment:**

1. Laboratory exercises and reports.
2. Scientific paper prepared from classroom experiments.
3. Read textbook and laboratory manual.
4. Read and submit reports on current published literature in physiology.

**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.

Reading reports, Lab reports, Essay exams, Term papers
--

Writing 40 - 80%
---------------------

**Problem Solving:** Assessment tools, other than exams, that demonstrate competence in computational or non-computational problem solving skills.

Lab reports
-------------

Problem solving 15 - 25%
-----------------------------

**Skill Demonstrations:** All skill-based and physical demonstrations used for assessment purposes including skill performance exams.

SCIENTIFIC PAPER

Skill Demonstrations  
15 - 25%

**Exams:** All forms of formal testing, other than skill performance exams.

Multiple choice, True/false, Matching items, Completion

Exams  
25 - 80%

**Other:** Includes any assessment tools that do not logically fit into the above categories.

None

Other Category  
0 - 0%

**Representative Textbooks and Materials:**

HUMAN PHYSIOLOGY by Ina F. Stuart, W.C. Brown Pub.

PRINCIPLES OF HUMAN PHYSIOLOGY by Gerard Tortora and Ronald Evans,  
Harper and Row Pub.