PHYSIO 58 Course Outline as of Fall 2015

CATALOG INFORMATION

Dept and Nbr: PHYSIO 58 Title: INTRO HUMAN PHYSIO
Full Title: Introduction to Human Physiology
Last Reviewed: 1/27/2020

Units		Course Hours per Week		Nbr of Weeks	Course Hours Total	
Maximum	3.00	Lecture Scheduled	2.00	17.5	Lecture Scheduled	35.00
Minimum	3.00	Lab Scheduled	3.00	6	Lab Scheduled	52.50
		Contact DHR	0		Contact DHR	0
		Contact Total	5.00		Contact Total	87.50
		Non-contact DHR	0		Non-contact DHR	0

Total Out of Class Hours: 70.00 Total Student Learning Hours: 157.50

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:
This is an introductory course in human physiology, organized around body systems and the theme of homeostasis. The course is designed for the beginning student preparing for these health-related fields: vocational nursing, radiologic technology; or those with a general interest in the function of the human body. This course will minimize bio-chemical and quantitative details taught in a general physiology course (e.g., PHYSIO 1), focusing on the fundamental concepts of physiology. (Not intended for nursing (RN), dental hygiene, or physical therapy majors.)

Prerequisites/Corequisites:

Recommended Preparation:
Eligibility for ENGL 1A or equivalent and Course Completion of CHEM 60

Limits on Enrollment:

Schedule of Classes Information:
Description: This is an introductory course in human physiology, organized around body systems and the theme of homeostasis. The course is designed for the beginning student

preparing for these health-related fields: vocational nursing, radiologic technology; or those with a general interest in the function of the human body. This course will minimize bio-chemical and quantitative details taught in a general physiology course (e.g., PHYSIO 1), focusing on the fundamental concepts of physiology. (Not intended for nursing (RN), dental hygiene, or physical therapy majors.) (Grade or P/NP)
Prerequisites/Corequisites:
Recommended: Eligibility for ENGL 1A or equivalent and Course Completion of CHEM 60
Limits on Enrollment:
Transfer Credit: CSU;
Repeatability: Two Repeats if Grade was D, F, NC, or NP

ARTICULATION, MAJOR, and CERTIFICATION INFORMATION:

AS Degree:	**Area**			Effective:	Inactive:
	C	Natural Sciences		Fall 1997	
CSU GE:	**Transfer Area**			Effective:	Inactive:
IGETC:	**Transfer Area**			Effective:	Inactive:
CSU Transfer:	Transferable	Effective:	Fall 1997	Inactive:	
UC Transfer:		Effective:		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 functions of the organ systems of the body and how each organ system contributes to control of homeostasis.
2. Describe the physiological basis for a number of major diseases and disorders of the human body.

Objectives:
Upon completion of this course, students will be able to:
1. Define homeostasis and explain how feedback mechanisms function to maintain homeostasis.
2. Describe the function of the organ systems of the body, including the nervous, endocrine, muscular, circulatory, respiratory, digestive, urinary, immune, reproductive systems.
3. Identify the roles of the nervous and endocrine systems in regulation of other organ systems.
4. Compare and contrast the basic mechanisms by which organ systems of the body maintain homeostasis.
5. Explain how the structure and function of cells support the function of organ systems.
6. Conduct simple physiological experiments using standard laboratory equipment.

Topics and Scope:

1. Introductory concepts

a. scientific method
b. levels of biological organization
c. homeostasis

2. Cell structure and function
   a. macromolecules
   b. organelles
   c. cell membranes
   d. ATP (adenosine triphosphate) and enzymes
3. Control systems: nervous and endocrine
   a. neurons, membrane potentials, synapses
   b. structure and function of CNS (central nervous system), PNS (peripheral nervous system), ANS (autonomic nervous system)
   c. sensory receptors, transduction
   d. endocrine glands, hormones
4. Muscle system
   a. skeletal, cardiac, smooth muscle
   b. muscle contraction
5. Circulatory system
   a. basic plan of circulation
   b. cardiac cycle
   c. blood vessels and blood pressure
   d. regulation of cardiac output, blood pressure
   e. basis for heart attack, hypertension, atherosclerosis
6. Respiratory system
   a. ventilation
   b. gas exchange
   c. regulation of respiratory rate
   d. description of chronic obstructive pulmonary disease
7. Urinary system
   a. formation of urine
   b. regulation of salt and water balance
   c. regulation of acid - base balance
8. Digestive system
   a. organs and enzymes of digestion
   b. factors that affect absorption
9. Immune system
   a. injury and infection
   b. organs, cells and molecules that provide immune defense
10. Reproductive system
   a. organs and hormones involved in sperm production
   b. organs and hormones of menstrual cycle, pregnancy, parturition, lactation
11. Laboratory exercises
   a. homeostasis
   b. osmosis
   c. enzyme activity
   d. reflex arc
   f. senses
   g. muscle contraction
   h. cardiac function
   i. pulmonary function
   j. renal function
   k. acid base balance

l. glucose tolerance test

Assignment:

1. Read 25-40 pages of text per week
2. Perform weekly laboratory experiments with data collection
3. Written laboratory reports, 12-16
4. Examinations: Four combined lecture and lab exams, a cumulative final exam
5. Written assignments, 2-5

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.

Lab reports and written assignments	Writing 10 - 30%

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

None	Problem solving 0 - 0%

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

None	Skill Demonstrations 0 - 0%

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

Multiple choice, true/false, matching items, completion, essay	Exams 60 - 80%

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

Class participation	Other Category 0 - 10%

Representative Textbooks and Materials:
Essentials of Human Anatomy & Physiology, 11th edition, Elaine Marieb, 2014, Pearson
Mader's Understanding Human Anatomy & Physiology, 8th edition, Susannah Longenbaker, 2013, McGraw-Hill
Instructor prepared laboratory text