KIN 0083 - PHYSIOLOGY OF FITNESS

Catalog Description

Formerly known as PHED 83
Hours: 54 lecture
Description: Introductory course in sports physiology with special emphasis on body systems and how each adapts and responds to physical movement. Review of training strategies implemented to increase functionality of organ systems to improve physical fitness and performance. Provides students with exposure to a variety of performance goals and fitness levels including exercise for health, fitness, recreation, and sports competition. (CSU, UC-with unit limitation)

Course Student Learning Outcomes

- CSLO #1: Describe how various organ systems function and adapt during physical activity.
- CSLO #2: Identify training strategies that may improve physical performance.
- CSLO #3: Explain how physical activity impacts the health of the body over time.

Effective Term

Fall 2019

Course Type

Credit - Degree-applicable

Contact Hours

54

Outside of Class Hours

108

Total Student Learning Hours

162

Course Objectives

1. Summarize the process by which muscle fibers are recruited, contract, and are fueled.
2. Identify the anatomy of a skeletal muscle.
3. Identify the endocrine glands and how they regulate fluid, metabolism, and caloric intake.
4. Analyze the anatomy of the neuron and how it functions allowing electrical impulses to be transmitted throughout the body during physical activity.
5. Evaluate the three basic energy systems and how they interact with physical activity.
6. Describe the process in which external respiration and internal respiration are affected by physical activity and how they are regulated.
7. Describe how the cardiovascular system circulates blood and its role in regulating, delivery of oxygen and energy, and removal of waste products based on activity level.
8. Identify and summarize the adaptations to the skeletal muscles, the neurological system, cardiovascular system and the respiratory system with exercise.
9. Explain and indicate the effect environmental conditions have on stimulating or inhibiting the body during exercise.
10. Categorize age and sex considerations in developing training in sport and exercise.
11. Distinguish and correlate the benefits of physical activity on health and disease prevention.

General Education Information

- Approved College Associate Degree GE Applicability
  - AA/AS - Health Ed/Physical Ed
- CSU GE Applicability (Recommended-requires CSU approval)
  - CSUGE - E1 Lifelong Learning and Self-Development
- Cal-GETC Applicability (Recommended - Requires External Approval)
- IGETC Applicability (Recommended-requires CSU/UC approval)

Articulation Information

- CSU Transferable
- UC Transferable

Methods of Evaluation

- Essay Examinations
  - Example: Students will be given a prompt to write a three page paper detailing the adaptations to the various body system responses and adaptations to a physically active life and that of sedentary life.
- Objective Examinations
  - Example: Using short answer questions, students will demonstrate knowledge of the anatomy of the heart. Standard grading will be used to assess learning.
- Projects
  - Example: Students will create a periodization calendar for a specific sport. The periodization will address the individual sport specific training needs as they relate to the respiratory system, cardiovascular system, and skeletal muscle adaptations.
- Skill Demonstrations
  - Example: Students will be asked to properly perform a blood pressure reading and heart rate readings.

Repeatable

No

Methods of Instruction

- Lecture/Discussion
- Distance Learning

Lecture:

1. Following an instructor facilitated lecture on the skeletal muscle, students should be able to identify the components of the skeletal muscle.
2. Instructor will facilitate a class discussion in which students will evaluate body system responses to physical activity in extreme heat and cold.

Distance Learning

1. Instructor will facilitate an activity for students to identify the anatomical components of a muscle fiber. Following the discussion, students are to outline and post the key components. Students are also expected to comment on other student posts.

Typical Out of Class Assignments
Reading Assignments

1. Read assigned pages from the textbook and be prepared to discuss which energy system is used in track for the 100 meter, 400 meter, and 3200 meter events. 2. Read current magazine articles regarding physiology, and be prepared to discuss. Example: Read articles from peer-reviewed journals regarding training at altitude and be prepared to discuss the physiological responses to the altitude training.

Writing, Problem Solving or Performance

1. In a three page paper compare and contrast the physiological responses to training using High Intensity Interval Training and a resistance only training. 2. Using the VO2 max assessment, write a two page paper, discussing the results and how they relate to the respiratory and cardiovascular systems and what kind of physical activities would help increase the value specific to the student.

Other (Term projects, research papers, portfolios, etc.)
Required Materials

- Physiology of Sport and Excercise
  - Author: Kenney W.L. Wilmore J.H. Costill D.L.
  - Publisher: Human Kinetics
  - Publication Date: 2015
  - Text Edition: 6th
  - Classic Textbook?:
  - OER Link:
  - OER:
- Exercise Physiology: Theory and Application to Fitness and Performance
  - Author: Powers, S.K. Howley, E.T.
  - Publisher: McGraw Hill
  - Publication Date: 2015
  - Text Edition: 9th
  - Classic Textbook?:
  - OER Link:
  - OER:
- Practical Guide to Exercise Physiology
  - Author: Kenney, W.L. Murray, B.
  - Publisher: Human Kinetics
  - Publication Date: 2016
  - Text Edition: 1st
  - Classic Textbook?:
  - OER Link:
  - OER:

Other materials and-or supplies required of students that contribute to the cost of the course.