KINS 8B: THEORY & CONCEPTS OF EXERCISE PHYSIOLOGY II

Foothill College Course Outline of Record

<table>
<thead>
<tr>
<th>Heading</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Effective Term</td>
<td>Summer 2022</td>
</tr>
<tr>
<td>Units</td>
<td>5</td>
</tr>
<tr>
<td>Hours</td>
<td>5 lecture per week (60 total per quarter)</td>
</tr>
<tr>
<td>Advisory</td>
<td>Maximum UC credit awarded for any or all of the following courses combined is 12 units: KINS 2, 3, 8A, 8B.</td>
</tr>
</tbody>
</table>

Degree & Credit Status: Degree-Applicable Credit Course

Foothill GE: Non-GE

Transferable: CSU/UC

Grade Type: Letter Grade Only

Repeatability: Not Repeatable

Student Learning Outcomes

- A successful student will be able to identify the physiological responses to exercise in the heat, cold, and at altitude.
- A successful student will be able to explain the impact of physical activity on cardiovascular disease, obesity, and diabetes.

Description

Applied concepts and principles of exercise physiology and how the human body responds to the demands of physical activity. Emphasis on the impact of environmental influences, including physiological responses to exercise in the heat, cold, and at altitude; optimizing performance in sport, overtraining and detraining; body composition and nutrition; use of ergogenic aids; age and sex considerations in sport and exercise; and the implications of physical activity for health and fitness.

Course Objectives

The student will be able to:

a. Identify the physiological responses to exercise in the heat and cold.

b. Understand body temperature regulation.

c. Explain environmental conditions, sport performance and risks with chronic exposure to altitude.

d. Understand the effects of overtraining, tapering for peak performance, and detraining.

e. Assess body composition and nutrition for exercise and sport.

f. Explain the effects of ergogenic aids in sport performance.

g. Recognize physiological responses across different age and gender populations.

h. Apply prescription of exercise for health and fitness.

i. Understand the impact, benefits and risks of physical activity on cardiovascular disease.

j. Describe the role of physical activity in the management of obesity and diabetes.

Course Content

a. Exercise in hot and cold environments

  i. Body temperature regulation

  ii. Physiological responses to exercise in the heat

  iii. Health risks during exercise in the heat

  iv. Acclimation to exercise in the heat

  v. Exercise in the cold

  vi. Physiological responses to exercise in the cold

  vii. Health risks during exercise in the cold

b. Exercise at altitude

  i. Environmental conditions at altitude

  ii. Physiological responses to acute altitude exposure

  iii. Exercise and sport performance at altitude

  iv. Acclimation: chronic exposure to altitude

  v. Optimizing training and performance

  vi. Health risks of acute exposure to altitude

c. Training for sport

  i. Optimizing training

  ii. Periodization of training

  iii. Overtraining

  iv. Tapering for peak performance

  v. Detraining

d. Body composition and nutrition for sport

  i. Assessing body composition

  ii. Body composition, weight, and sport performance

  iii. Classification of nutrients

  iv. Water and electrolyte balance

  v. The athlete's diet

e. Ergogenic aids and sport

  i. Researching ergogenic aids

  ii. Nutritional ergogenic aids

  iii. Anti-doping codes and drug testing

  iv. Prohibited substances and techniques

f. Children and adolescents in sport and exercise

  i. Growth, development, and maturation

  ii. Physiological responses to acute exercise

  iii. Physiological adaptations to exercise training

  iv. Physical activity patterns among youth

  v. Sport performance and specialization

  vi. Special issues

g. Aging in sport and exercise

  i. Height, weight, and body composition

  ii. Physiological responses to acute exercise

  iii. Physiological adaptations to exercise training

  iv. Sport performance

  v. Special issues

h. Sex differences in sport and exercise

  i. Body size and composition

  ii. Physiological responses to acute exercise

  iii. Physiological adaptations to exercise training
iv. Sport performance
v. Special issues
i. Prescription of exercise for health and fitness
   i. Health benefits of exercise
   ii. Exercise is medicine
   iii. Medical clearance
   iv. Exercise prescription
   v. Monitoring exercise intensity
   vi. Exercise program
   vii. Exercise and rehabilitation of people with diseases
j. Cardiovascular disease and physical activity
   i. Prevalence of cardiovascular disease
   ii. Forms of cardiovascular disease
   iii. Understanding the disease process
   iv. Determining individual risk
   v. Reducing risk through physical activity
   vi. Risk of heart attack and death during exercise
   vii. Exercise training and rehabilitation of patients with heart disease
k. Obesity, diabetes, and physical activity
   i. Understanding obesity
   ii. Weight loss
   iii. Role of physical activity in weight management and risk reduction
   iv. Understanding diabetes
   v. Treatment of diabetes
   vi. Role of physical activity in diabetes

Representative Text(s) and Other Materials

Types and/or Examples of Required Reading, Writing, and Outside of Class Assignments
a. Weekly reading assignments from text, online curriculum, and outside sources
b. Homework assignments, including terminology and responses to discussion questions
c. Responses to essay questions on mid-term and final exam
d. Research paper on topic from scientific peer reviewed journal
e. Weekly discussion posts on topics relevant to course material

Discipline(s)
Kinesiology

Lab Content
Not applicable.

Special Facilities and/or Equipment
When taught as an online distance learning or hybrid section, students and faculty need ongoing and continuous internet and email access.

Method(s) of Evaluation
Methods of Evaluation may include but are not limited to the following:

Exams and quizzes: multiple choice, matching and essay questions to assess student learning outcomes
Analysis of selected case studies using various training scenarios
Research paper on current applied exercise physiology topic from a scientific, peer reviewed journal
Weekly homework assignments to emphasize course topics
Participation in classroom discussions

Method(s) of Instruction
Methods of Instruction may include but are not limited to the following:

Lecture presentations and classroom discussion using the language of applied exercise physiology
Reading of textbook, use of multi-media, and related material to promote discussion and synthesis of objectives
Presentations of projects followed by in-class discussion and evaluation
Problem solving exercises and discussion emphasizing objective analysis and critical thinking