# El Camino College

**COURSE OUTLINE OF RECORD - Official**

## I. GENERAL COURSE INFORMATION

**Subject and Number:** Physical Education 270
**Descriptive Title:** Fitness and Sports Nutrition

**Course Disciplines:** Physical Education

**Division:** Health Sciences and Athletics

**Catalog Description:** This course examines the nutritional and dietary requirements of physically active adults and those involved in athletic competition. The course emphasizes optimal nutrition regimens as an integral part of overall health and peak performance. Emphasis is placed on human nutrition needs, the role of supplements as ergogenic aids, and the integration of diet and exercise in achieving optimal body composition.

**Conditions of Enrollment:** **Recommended Preparation**

eligibility for English A

AND

Mathematics 23

**Course Length:** [X] Full Term [ ] Other (Specify number of weeks):
**Hours Lecture:** 3.00 hours per week [ ] TBA
**Hours Laboratory:** 0 hours per week [ ] TBA
**Course Units:** 3.00

**Grading Method:** Letter
**Credit Status** Associate Degree Credit

**Transfer CSU:** [X] Effective Date: 12/12/2002
**Transfer UC:** [ ] No

**General Education:**
**El Camino College:** _____
**CSU GE:** _____
**IGETC:** _____

## II. OUTCOMES AND OBJECTIVES

### A. COURSE STUDENT LEARNING OUTCOMES (The course student learning outcomes are listed below, along with a representative assessment method for

**each. Student learning outcomes are not subject to review, revision or approval by the College Curriculum Committee)**

1. Student will identify effective protein and nutritional supplements for enhanced muscular recovery from exhaustive exercise.
2. Student will identify effective carbohydrate supplements for pre-exhaustive, and post-exhaustive endurance training sessions.
3. Student will design an effective strategy to achieve goal body weight and composition.

The above SLOs were the most recent available SLOs at the time of course review. For the most current SLO statements, visit the El Camino College SLO webpage at http://www.elcamino.edu/academics/slo/.

**B. Course Student Learning Objectives (The major learning objective for students enrolled in this course are listed below, along with a representative assessment method for each)**

1. Describe the basic functions and food sources of the macronutrients and micronutrients.

   Objective Exams
2. Compare and contrast the nutrient needs of physically active individuals and sedentary individuals.

   Essay exams
3. Explain the value of nutrient timing and its application in endurance and resistance training.

   Essay exams
4. Discuss the contribution of nutrition to the achievement of fitness goals and athletic performance.

   Essay exams
5. Recognize the known efficacy and safety of nutritional supplements as ergogenic aids in fitness and sport.

   Multiple Choice
6. Describe the importance of proper hydration before, during, and after exercise

   Essay exams
7. Determine appropriate weight management strategies for active individuals and competitive athletes.

   Essay exams
8. Evaluate published dietary regimens promoted for fitness and sport participants.

   Essay exams

**III. OUTLINE OF SUBJECT MATTER (Topics are detailed enough to enable a qualified instructor to determine the major areas that should be covered as well as ensure consistency from instructor to instructor and semester to semester.)**

| Lecture or Lab | Approximate Hours | Topic Number | Major Topic |
|---|---|---|---|
| Lecture | 4 | I | INTRODUCTION TO NUTRITION FOR HEALTH, FITNESS, PERFORMANCE<br>A. Exercise and health related fitness |

| | | | |
|---|---|---|---|
| | | | B. Nutrition and health related fitness<br>C. Sports related fitness:Exercise and Nutrition<br>D. Ergogenic aids and sports performance |
| Lecture | 6 | II | NUTRITION FOR FITNESS AND SPORTS PERFORMANCE<br>A. Esential nutrients and recommended nutrition<br>B. Balanced diet and nutrient density<br>C. Healthful dietary guidlines<br>D. Consumer nutrition: food labels and health claims<br>E. Dietary supplements and health |
| Lecture | 6 | III | HUMAN ENERGY<br>A. Measures of energy<br>B. Human energy systems<br>C. Energy metabolism during rest<br>D. Energy metabolism during exercise<br>E. Energy Sytems and fatique during exercise |
| Lecture | 18 | IV | CARBOHYDRATES, PROTEIN, AND FATS<br>A. Metabolism and function<br>B. Carbohydrates, protein, and fats role during exercise<br>C. Ergogenic aspects<br>D. Carbohydrate loading<br>E. Proteins and exercise<br>F. Amino acids including specific branch-chain amino acids<br>G. Dietary fats and cholesterol |
| Lecture | 3 | V | VITAMINS: Organic Regulators<br>A. Basic facts<br>B. Fat-soluble vitamins<br>C. Water-soluble vitamins<br>D. Vitamin supplements: ergogenic aspects<br>E. Vitamin supplements: health aspects |
| Lecture | 3 | VI | MINERALS: Inorganic Regulators<br>A. Basic Facts<br>B. Macrominerals<br>C. Trace minerals<br>D. Mineral supplements for exercise and health |
| Lecture | 3 | VII | WATER, ELECTROLYTES, AND TEMPERATURE REGULATION<br>A. Human water and hydration<br>B. Role of electrolytes in performance<br>C. Regulation of body temperature<br>D. Exercise performance in heat: fluid, carbohydrate, and electrolyte replacement<br>E. Ergogenic aspects |
| Lecture | 3 | VIII | BODY WEIGHT AND COMPOSITION FOR HEALTH AND SPORT<br>A. Ideal body weight and composition<br>B. Weight gain, lean body mass, obesity, and health<br>C. Weight loss and health<br>D. Body composition and exercise performance |
| Lecture | 3 | IX | WEIGHT MANAGEMENT AND LOSS THROUGH PROPER NUTRITION AND EXERCISE<br>A. Fundamentals of weight control<br>B. Dietary modifications<br>C. Exercise programs and weight loss<br>D. Prudent weight control programs |
| | | | |

| | | | |
|---|---|---|---|
| Lecture | 3 | X | WEIGHT GAIN THROUGH PROPER NUTRITION AND EXERCISE<br>A. Basic considerations<br>B. Nutritional considerations for increases in lean body mass<br>C. Exercise considerations for increases in lean body mass |
| Lecture | 2 | XI | DRUGS AND RELATED DIETARY SUPPLEMENTS<br>A. Alcohol effects and health implications<br>B. Caffeine effects and health implications<br>C. Sodium bicarbonate and health implications<br>D. Dietary and herbal supplements in exercise and sports performance |
| **Total Lecture Hours** | | 54 | |
| **Total Laboratory Hours** | | 0 | |
| **Total Hours** | | 54 | |

## IV. PRIMARY METHOD OF EVALUATION AND SAMPLE ASSIGNMENTS

A. **PRIMARY METHOD OF EVALUATION:**

Substantial writing assignments

B. **TYPICAL ASSIGNMENT USING PRIMARY METHOD OF EVALUATION:**

Using reputable professional references (International Society of Sports Nutrition; International Journal of Sports Nutrition and Exercise Metabolism), plan the following: pre-exercise training meal, exercise training diet, carbohydrate loading diet. Include the protein requirements for athletes involved in different sports activities and explain why different. Provide guidelines for carbohydrate intake during exercise to enhance performance and post-exercise recovery.

C. **COLLEGE-LEVEL CRITICAL THINKING ASSIGNMENTS:**

1. In a written report, evaluate claims for dietary supplements purported to result in increased muscle mass.
2. In a written report, contrast the protein, fat, carbohydrate, and total energy requirements of individuals focusing on resistance exercise training versus endurance exercise training.

D. **OTHER TYPICAL ASSESSMENT AND EVALUATION METHODS:**

Essay exams

Reading reports

Written homework

Term or other papers

Multiple Choice

Completion

Matching Items

True/False

## V. INSTRUCTIONAL METHODS

Discussion
Guest Speakers
Lecture
Other (please specify)
Internet resources, nutrient analysis software, periodical literature

**Note: In compliance with Board Policies 1600 and 3410, Title 5 California Code of Regulations, the Rehabilitation Act of 1973, and Sections 504 and 508 of the Americans with Disabilities Act, instruction delivery shall provide access, full inclusion, and effective communication for students with disabilities.**

## VI. WORK OUTSIDE OF CLASS

Study
Answer questions
Required reading
Problem solving activities
Written work

**Estimated Independent Study Hours per Week:** 6

## VII. TEXTS AND MATERIALS

A. **UP-TO-DATE REPRESENTATIVE TEXTBOOKS**
Kreider RB, Leutholtz BC, Katch FI, Katch V., Eds. Exercise and Sport Nutrition: Principles, Promises, Science, Recommendations. Fitness Technologies Press, 2009.

B. **ALTERNATIVE TEXTBOOKS**

C. **REQUIRED SUPPLEMENTARY READINGS**
Joint Position Statement: Nutrition and Athletic Performance, American College of Sports Medicine, American Dietetic Association, and Dieticians of Canada, Med Sci Sports Exercise, 2000 Dec;32(12) :2130-45

D. **OTHER REQUIRED MATERIALS**

## VIII. CONDITIONS OF ENROLLMENT

**A. Requisites (Course and Non-Course Prerequisites and Corequisites)**

| Requisites | Category and Justification |
|---|---|

**B. Requisite Skills**

| Requisite Skills |
|---|

### C. Recommended Preparations (Course and Non-Course)

| Recommended Preparation | Category and Justification |
|---|---|
| Non-Course Recommended Preparation<br>AND<br>eligibility for English A | |
| Course Recommended Preparation<br>Mathematics-23 | |

### D. Recommended Skills

| Recommended Skills |
|---|
| Students should be able to read and comprehend a college level text book. ENGL 84 - Select and employ reading strategies to interpret the content of a collegelevel textbook, with special focus on constructing a thesis statement and providing valid support.ENGL 84 - Identify an implied main idea (thesis), and support with major and minor details, from a longer text or novel.ENGL 84 - Interpret a book-length work through discussion, journal writing, or composition writing. |
| It is recommended that you consume a certain percentage of your calories from carbohydrates, fats, and proteins. The student should be able to determine caloric requirements based upon energy requirements for athletic, active, or sedentary individuals. MATH 23 -<br>Acquire effective study skills including the use of the calculator in appropriate situations.<br>MATH 23 -<br>Perform various operations (addition, subtraction, multiplication, division, and exponentiation) on different sets of numbers (whole, integer, and rational) and recognize equivalence when it occurs, particularly with fractions, decimals and percents.<br>MATH 23 -<br>Formulate mathematical representations of real-world applications including the recognition of proportional relationships.<br>MATH 23 -<br>Read, interpret, and construct tables, charts and graphs. |
| Write short essays with correct grammar. ENGL A -<br>Read and apply critical thinking skills to college-level expository prose for the purposes of writing and discussion.<br>ENGL A -<br>Apply appropriate strategies in the writing process including prewriting, composing, revising, and editing techniques.<br>ENGL A -<br>Practice techniques of academic research, including use of databases and web resource evaluation. |

### E. Enrollment Limitations

| Enrollment Limitations and Category | Enrollment Limitations Impact |
|---|---|

**Course created by Thomas W. Storer on 09/01/2002.**

**BOARD APPROVAL DATE: 12/09/2002**

**LAST BOARD APPROVAL DATE: 11/20/2017**

**Last Reviewed and/or Revised by Dean Lofgren on 06/09/2015**

19083