

Las Positas College  
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**Course Outline for NUTR 5**  
**NUTRITION/PERFORMANCE & SPORT**  
**Effective: Fall 2002**

**I. CATALOG DESCRIPTION:**

NUTR 5 — NUTRITION/PERFORMANCE & SPORT — 3.00 units

Students will study the role of nutrition in sports, performance and physical fitness. Optimal food, nutrient, and activity choices to maximize athletic performance and support health will be addressed.

3.00 Units Lecture

**Grading Methods:**

Letter Grade

**Discipline:**

	<b>MIN</b>
<b>Lecture Hours:</b>	54.00
<b>Total Hours:</b>	54.00

**II. NUMBER OF TIMES COURSE MAY BE TAKEN FOR CREDIT: 1**

**III. PREREQUISITE AND/OR ADVISORY SKILLS:**

**IV. MEASURABLE OBJECTIVES:**

**Upon completion of this course, the student should be able to:**

1. Describe the energy producing nutrients and micronutrients, their functions, and food sources;
2. Describe the influence of food choices on physical performance;
3. Describe other substances that may be related to athletic performance;
4. Describe energy balance related to caloric intake, energy expenditure, and body composition;
5. Evaluate ethical implications of nutritional intake in relation to sports and athletic performance;
6. Evaluate current nutrition information;
7. Identify current issues in nutrition for sports and athletic performance

**V. CONTENT:**

- A. Exercise physiology and its implications for sports nutrition
  1. Exercise prescription
  2. Muscle fiber types
  3. Energy sources for different types of work
- B. Carbohydrates
  1. Classification
  2. Digestion
  3. Functions
  4. Blood glucose homeostasis
  5. Recommended intakes
  6. Glycogen loading
  7. Carbohydrate replacement
  8. Endurance capacity
- C. Lipids
  1. Classification
  2. Digestion
  3. Recommended intakes
  4. Fat metabolism and utilization during exercise
  5. Training and fatty acid oxidation
  6. Effects of diet on fat metabolism and performance
- D. Proteins
  1. Amino acids and protein structure
  2. Digestion
  3. Functions
  4. Recommended intakes and protein requirements of athletes
  5. Dangers of excess protein intake
  6. Protein usage and athletic performance
- E. Vitamins
  1. Fat-soluble
  2. Water-soluble

- 3. Supplements
- F. Minerals
  - 1. macrominerals
  - 2. trace minerals
  - 3. electrolytes
- G. Nutritional ergogenic aids
  - 1. supplements
  - 2. herbs
  - 3. foods
  - 4. other substances that may be related to athletic performance
- H. Fluid needs of athletes
  - 1. Water
  - 2. Electrolytes
  - 3. fluid and electrolyte replacement
  - 4. temperature regulation
  - 5. ergogenic aspects
- I. Body composition
  - 1. body fat distribution
  - 2. assessment
  - 3. overweight and obesity
  - 4. underweight and eating disorders
- J. Nutrition recommendations
- K. Reliable sources of nutrition information
- L. Current issues and controversies in nutrition, including the use of ergogenic aids by professional athletes, amateur athletes, and youth athletes

#### VI. METHODS OF INSTRUCTION:

- A. Read text and internet based materials
- B. **Discussion** -
- C. Media presentations
- D. **Lecture** -
- E. **Student Presentations** -
- F. Group Activities
- G. **Guest Lecturers** -

#### VII. TYPICAL ASSIGNMENTS:

- A. Reading 1. Read the chapter on Water 2. Read the table on guidelines for fluid replacement B. Discussion 1. During a moderate exercise session of less than one hour, what type of fluid replacement would be sufficient? 2. What role do sports drinks play in fluid replacement? C. Group Activities 1. Determine body composition using three different techniques

#### VIII. EVALUATION:

- A. **Methods**
  - 1. Exams/Tests
- B. **Frequency**

#### IX. TYPICAL TEXTS:

- 1. Williams, Melvin. *Nutrition for Health, Fitness, and Sport*. . 6th ed., McGraw Hill, 2002.
- 2. Clark, Nancy. *Nancy Clark's Sports Nutrition Guidebook*. . 2nd ed., Sports Nutrition Materials, 1997.
- 3. Berning, Jacqueline, and Suzanne Steen. *Nutrition for Sport and Exercise*. 2nd ed., Aspen Publishers, 1998.
- 4. Driskell, Judy *Sports Nutrition*., CRC Press, 2000.

#### X. OTHER MATERIALS REQUIRED OF STUDENTS:

- A. Internet access.