

DE ANZA COLLEGE
BIOLOGICAL AND HEALTH SCIENCES DIVISION
COURSE OUTLINE

Degree Applicable
Fall 2001

Nutrition 10

1. Catalog Information

NUTR 10 Contemporary Nutrition 4 units

Advisory: English Writing 100B and Reading 100 or Reading 91 (or Language Arts 100), or English as a Second Language 24 or 72; Mathematics 200

Four hours lecture

Physiological, psychological and economic aspects of obtaining an adequate diet through the life cycle. Relationship of nutrients to health and physical fitness. Evaluation of current nutritional issues and controversies.

II. Course Objectives

The student will:

A. Evaluate nutrition information based on physiological principles and discuss the attitudes and values (ie. psychological, cultural and economic factors) that also influence this evaluation.

B. Explain the general physiological principles of digestion, absorption, metabolism and excretion.

C. Analyze the physiological concepts of energy balance and apply these principles along with personal attitudes and values to the selection of a weight control program.

D. Evaluate the health benefits of activity and exercise.

E. Comprehend the major physiological functions of the nutrients and identify good food sources of the macronutrients and micronutrients. Analyze the choices based on psychological, cultural and economic considerations.

F. Judge the effects of food choices on physical fitness and health during the life cycle, including gender differences, and propose improved choices for better health and physical performance.

G. Compare and contrast the multicultural and global aspects of nutrition and relate these attitudes and behaviors to current nutritional issues.

III. Essential Student Materials

Workbook, textbook and simple calculator

IV. Essential College Facilities

Videos, projection for Power Point presentations; access to WEB

V. Expanded Description: Content and Form

A. Evaluate nutrition information based on physiological principles and discuss the attitudes and values (ie. psychological, cultural and economic factors) that also influence this evaluation.

1. Physiological techniques for the evaluation of nutritional information
 - a. Development of nutritional myths and nutritional facts
 - b. Measures of nutritional status
2. Psychological, cultural and economic influences on the development of nutritional information and nutritional policies
 - a. Use of Food Guide Pyramid and Dietary Reference Intake values
 - b. Factors influencing food choices including availability, income and food prices, advertising and the media, social and cultural factors and personal preference.
 - 1) Superfoods
 - 2) Taboos
 - 3) Gatekeeper

B. Explain the general physiological principles of nutrition

1. The action of the digestive system
2. The role of absorption and the circulatory system
3. The general uses of nutrients within the cells.
4. The production of waste products and the role of various excretory systems

C. Analyze the physiological concepts of energy balance and apply these principles along with personal attitudes and values to the selection of a weight control program.

1. Caloric values of foods
2. Energy metabolism at rest and during activity
3. Definitions and causes of obesity
4. Weight control diets
 - a. Types including very low calorie and very low carbohydrate
 - b. Criteria for selection including psychological, cultural and economic factors

D. Evaluate health benefits of activity and exercise

1. Role of oxygen in aerobic and anaerobic metabolism
2. Importance of water and protein for the physically active individual
3. Impact of exercise on weight loss, weight gain and weight maintenance
 - a. Role of aerobic and strength training
 - b. Set point theory and how exercise influences this value
4. Role of activity and exercise as a preventative measure for chronic disease
 - a. Role in heart disease, hypertension, diabetes and cancer
5. How various cultures incorporate moderate activity in their lifestyles

E. Comprehend the major physiological functions of the nutrients and identify good food sources of the macronutrients and micronutrients. Analyze the choices based on psychological, cultural and economic considerations.

1. Macronutrients
 - a. Specific functions of water, carbohydrates, fats and proteins
 - b. Food sources of water, carbohydrates, fats and proteins
2. Micronutrients
 - a. Function and food sources of vitamins
 - b. Function and food sources of minerals
3. Effects of caffeine, alcohol and other substances in the diet

4. Criteria for selection of practical food sources based on psychological, cultural and economic factors.
 - a. Analysis based Maslow's Hierchary of Needs
 - b. Analysis of food habit changes based on Prochaska's Behavior Change model

F. Judge the effects of food choices on physical fitness and health during the life cycle, including gender differences, and propose improved choices for better health and physical performance.

1. The importance of weight gain and adequate nutrition in pregnancy
2. The pros and cons of breast feeding based on cultural and economic attitudes
3. Development of food habits in the preschool and school age child and other nutritional concerns
4. Development and treatment of eating disorders in the teenager
5. Prevention of chronic disease in the adult including gender specific diseases
6. Psychological, cultural and economic concerns that influence the nutritional status of the aging adult

G. Compare and contrast the multicultural and global aspects of nutrition and relate these attitudes and behaviors to current nutritional issues.

1. Food habits and nutritional attitudes in various subcultures in the United States and in other countries
2. Current controversial issues and how specific cultural groups appraise their risk and nutritional behavior
 - a. Understanding and use of food labels
 - b. Sugar and its metabolic role in health
 - c. Essential fatty acids in health and disease
 - d. Vegetarian diets
 - e. Risk factors for heart disease, cancer, osteoporosis, hypertension
 - f. Nutrient supplements and the importance of phytochemicals
 - g. Food safety issues including bacteria contamination, heavy metal, natural toxins, food additives, irradiation.

VI. Assignments

A. Required reading assignments from workbook and textbook

B. Daily calculations and daily written assignment of several paragraphs:

1. Goals for nutrition and physical fitness, factors that influence food habits as well as evaluation of nutrition information on the WEB
2. Critical evaluation of one day food intake and a selected food label based on current guidelines.
3. Calculation of carbohydrate, fat, protein, water, vitamin and minerals needs as compared to a one-day dietary intake
4. Calculation of individual energy balance based on activity and exercise.
5. Calculation of the time required to expend 300 calories of moderate activity for weight control and good health.
6. Recognition of weight control by calculating caloric intake and caloric output and an evaluation of a popular weight control program.
7. Self assessment of risk for dehydration, hyperactivity, heart disease, eating disorders, vitamin deficiencies, hypertension, osteoporosis, food born illness, cancer
8. Evaluation of vegetarian diets

VII. Methods of Evaluating Objectives

A. Exams that include objective and short written answers to questions

- B. Written assignments to including daily calculation and short essay questions
- C. Final exam that include objective and short written answers to questions

VIII. Texts and Supporting References

A. Suggested Textbooks

1. *Boyle, Marie. *Personal Nutrition*, 4th ed., Wadsworth/Thompson Learning, 2001.
2. Brown, Judith. *Nutrition Now*, 2nd ed., Wadsworth/Thompson Learning, 1999.

B. Workbook:

1. *Coltrin, Dorothy. *Practical Activities to Understanding Contemporary Nutrition*, 4th ed., McGraw-Hill, 2000.

C. References

1. Cook-Fuller, Charlotte, *Annual Editions in Nutrition*, Duskin/McGraw-Hill, 2001
- 2.Sizer, Frances and Whitney, E., 7th ed. *Nutrition, Concepts and Controversies*, Wadsworth/Thompson Learning, 1997.