Virginia Western Community College
HLT 230
Principles of Nutrition

Prerequisites
BIO 101 or NAS 2

Course Description
Introduces students to the basic concepts of nutrition and its impact on personal wellness. Emphasizes an evidence-based approach to various topics, such as the nutrient components of food, the components of a healthy eating pattern, and the relationship between diet and health. Provides a behavioral approach to nutrient guidelines for the development and maintenance of optimum wellness. The assignments in the course require college-level reading fluency and coherent communication through documented written reports.

Semester Credits: 3 Lecture Hours: 3 Lab/Clinical/Internship Hours: 0

Required Materials

Textbook:
Human Nutrition by the University of Hawai'i at Mānoa Food Science and Human Nutrition Program. Download this book for free at: http://pressbooks.oer.hawaii.edu/humannutrition/

Other Required Materials:
None

Course Objectives
- Communication
  - Communicate openly and accurately with others regarding nutrition issues
- Critical Thinking
  - Discuss the impact of lifestyle behaviors, including nutrition and physical activity, on lifelong health
  - Evaluate current individual nutrition practices and incorporate components of a healthy diet into personal nutrition choices
  - Compare and contrast nutritional needs at various stages of the life cycle
- Social and Cultural Understanding
  - Discuss the personal, cultural, social, and psychological factors affecting food choices
- Information Literacy
  - Assess nutrition information for scientific reliability and evaluation current nutrition concepts and controversies

  - Select and utilize credible sources of nutrition and health information
- Scientific Reasoning
  - Identify the major nutrients, where they are found in foods, and their role in body structure and function.
  - Describe the components of a healthy eating pattern based on current evidence-based guidelines
  - Explain the physiological processes whereby the body breaks down food and absorbs nutrients
  - Discuss the interrelationships of diet to development of obesity and specific chronic diseases, and other physical and mental illnesses and conditions
- Personal Development
  - Discuss the role nutrition plays in the maintenance of health/wellness
  - Construct and employ a personalized meal plan that meets individual dietary needs and incorporates sound nutrition principles
- Introduction to Nutrition Concepts
  - Define nutrition
  - Describe the body's need for calories, nutrients and other substances
  - Explain the connection between diet and health
  - Distinguish among the six classes of nutrients
  - Explain the concept of essential nutrients
  - Discuss the concepts of adequacy, balance, calorie control, moderation, and variety.
  - Discuss the factors affecting individual food choices
  - Explain the motivations for nutrition misinformation in the media
  - Discuss ways to identify nutrition misinformation
  - Discuss sources of scientifically reliable nutrition research and funding sources
  - Analyze selected nutrition articles and websites for reliability and credibility
- Nutrition Standards, Guidelines, and Healthy Eating Patterns
  - Define the five dietary reference intake (DRI) values
  - Discuss the application of the DRIs to various population groups and individuals
  - Discuss the key recommendations in the Dietary Guidelines for Americans
  - Explain the key recommendations for each food group based on the USDA Choose My Plate plan
  - Discuss the key components of USDA Eating Patterns
  - Demonstrate how various diet-planning tools can be used to plan a nutritious diet
  - Identify strategies for healthy eating on a budget
  - Identify and dispel common nutrition myths
  - Explain the key elements of the nutrition label
  - List the requirements/rules for each element of the nutrition label
  - Explain the FDA's policy on health claims on food labels
  - Discuss the differences between the nutrition label and the supplement label
  - Analysis and compare various nutrition labels for required elements and health claims
- Body Systems and Nutrition
  - Name six basic needs of the body's cells

  - Explain the interaction among the endocrine, nervous, and cardiovascular systems, and digestive system health.
  - Explain the role of nutrition in the functioning of the immune system
  - List the main digestive organs and describe the function of each
  - Describe the primary function of digestion enzymes
  - Describe how fats, carbohydrates and proteins are digested
  - List and describe the major digestive disorders to include possible causes and treatment
- Carbohydrates, Proteins and Fats
  - Discuss the role of carbohydrates, protein, and fat in the body
  - Distinguish between simple and complex carbohydrates
  - Discuss the health benefits of a high fiber diet
  - Dispel the myth that "carbs are bad" and discuss the health benefits of eating complex carbohydrates
  - Distinguish between complete and incomplete proteins
  - Explain the concept of complementary proteins
  - Discuss the consequences of too little and too much protein
  - Distinguish among saturated, trans and unsaturated fats
  - Discuss the health benefits of a diet rich in unsaturated fats and the adverse health effects of saturated and trans fats
  - Distinguish between "good" and "bad" cholesterol
  - List the recommended amount of calories from fat, carbohydrates and protein
  - Identify food sources for carbohydrates, proteins and fats
- Vitamins, Minerals, and Water
  - Distinguish between water soluble and fat soluble vitamins
  - Explain the function of vitamins and minerals in the body
  - Identify food sources for vitamins
  - Describe recommendations for preventing vitamin deficiencies and toxicities
  - Explain the health benefits of calcium, iron, and potassium
  - Discuss the relationship between sodium intake and hypertension
  - Discuss the role of water as an essential nutrient
  - Discuss the health benefits of water
  - Discuss the risks of water deficiency and water toxicity
- Energy Balance and Weight Management
  - Define basal metabolic rate (BMR), non-exercise thermogenesis, exercise thermogenesis, and diet-induced thermogenesis
  - Discuss the concept of energy balance
  - Calculate energy needs based on the DRI method.
  - Explain how weight status is defined in adults and children
  - Calculate body mass index (BMI)
  - Define BMI classifications in adults and children
  - Discuss the influences of obesity on health status
  - Distinguish between types and location of fat as it pertains to health risk
  - List methods for measuring body fat

  - Discuss various theories of obesity
  - List the health effects of being underweight
  - Discuss the strategies for achieving and maintaining a healthy body weight to include food and lifestyle choices
  - Identify the pros and cons of popular diet plans
  - Define medical treatment of obesity
- Diet and Disease
  - Define the three types of diabetes
  - Describe the characteristics of Type 1 and Type 2 diabetes
  - Explain the health consequences of Type 2 diabetes
  - Describe pre-diabetes and Metabolic Syndrome
  - Identify dietary and lifestyle factors to prevent and manage Type 2 diabetes
  - Discuss the major risk factors for heart disease
  - Distinguish between HDL and LDL cholesterol
  - Identify strategies to prevent and manage heart disease
  - Define acceptable blood lipid levels
  - Define cancer and explain how it develops
  - Identify the causes of cancer, genetic and environmental
  - Identify cancers amenable to dietary intervention
  - Describe a diet that will lower the risk of cancer
- Performance Nutrition
  - Define physical activity and performance nutrition
  - Explain the health benefits of physical activity
  - List the physical activity guidelines for Americans
  - Describe the components of physical fitness (cardiorespiratory endurance, muscular strength and endurance, and flexibility)
  - Identify the key nutrient needs for physical performance
  - Identify healthy foods choices for various types of physical performance
- Life Cycle Nutrition: Mother and Infant
  - Identify critical periods of fetal development
  - Discuss the importance of pregnancy weight status and prenatal weight gain
  - Discuss energy needs during pregnancy
  - Identify key nutrient needs during pregnancy and the health implications of deficiencies
  - Discuss the effects of alcohol and tobacco consumption during pregnancy
  - Discuss the benefits of breastfeeding
  - Identify nutrient needs for breastfeeding
  - Discuss current infant feeding recommendations
- Life Cycle Nutrition: Children, Teens, and Older Adults
  - Identify nutrient needs during each stage of childhood (early childhood, school-age, and adolescence)
  - Discuss food preference development in children
  - Discuss recommendations for healthy diets in children and youth
  - Distinguish between food allergies and food intolerance

  - Describe how food allergies and food intolerances develop
  - Describe the most common symptoms of intolerance and allergic reactions to food
  - List the foods most likely to cause intolerance symptoms or allergic reactions
  - Discuss the effects of alcohol and tobacco consumption.
  - Review the recommended nutrient intake ranges for older adults
  - Discuss key nutrition issues for older adults
  - Identify key nutrient needs for middle age and older adults
- Food Safety
  - Define foodborne illness
  - Distinguish between food infection and food intoxication
  - Identify potential sources of food contamination
  - Discuss the causes and risks of foodborne illness
  - Discuss food safety regulations
  - Discuss the consumer's role in preventing foodborne illness
  - Explain regulation of food additives
  - Discuss the benefits and potential risks of food additives
- U.S. and Global Nutrition Issues
  - Define food insecurity
  - Identify socio-economic factors that affect access to food, food choice and food quality
  - Identify strategies for addressing food insecurity
  - Identify the leading problem areas related to malnutrition and hunger
  - Discuss strategies for tackling the global nutrition crisis
  - Identify threats to the global food supply
  - Discuss strategies for protecting the US and global food supply

Course Outcomes

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

• Demonstrate a basic understanding of nutritional foundations including behavioral and instinctive food choices, role of macronutrients, micronutrients and water in dietary planning
• Develop a basic knowledge of the various human body systems
• Demonstrate an aptitude for discerning relevant nutritional materials including books, websites, articles, and agencies that provide appropriate nutritional guidelines
• Learn to promote healthy methods of weight control and understand how current trends in weight loss have negative health consequences
• Learn to think more analytically, critically and logically in applying nutritional principles
• Develop an understanding of nutrition as it relates to human performance and across the lifespan
• Demonstrate the ability to understand food safety and techniques to improve food safety
• Learn basic health concerns and how nutrition is related to those concerns

Topical Description

- Introduction to Nutrition Concepts
- Nutrition Standards, Guidelines, and Healthy Eating Patterns
- Body Systems and Nutrition
- Carbohydrates, Proteins, & Fats
- Vitamins, Minerals, and Water
- Energy Balance and Weight Management
- Diet and Disease
- Performance Nutrition
- Life Cycle Nutrition: Mother and Infant
- Life Cycle Nutrition: Children, Adolescence, and Older Adults
- Food Safety
- U.S. and Global Nutrition Issues

Notes to Instructors

1. Departmental policy dictates that instructors do not allow students to keep tests.
2. A comprehensive final exam counting 15%-20% of the total grade will be given at the end of the semester.
3. The syllabus should state what the course grade will be based on, such as tests, quizzes, a comprehensive final exam, and any other assignments made by the instructor.
4. It will be at the discretion of the instructor if they want to include any of the other chapters or concepts within the text.

ADA Statement (PDF)
Title IX Statement (PDF)