Course Title: Nutrition Through Lifespan

Course Number: BI 251

Pre-Requisites: BI 151, BI 216

Credits: 3

Contact Hours: 3

1. **Course Description:**

This course explores the changing nutritional needs as an individual progresses through the normal life cycle. Topics include physiology and nutritional demands of growth periods, the physiology and nutritional demands of the aging process and optimal dietary behaviors during pregnancy, lactation, infancy, childhood, adolescence and late adulthood. Prerequisites: BI 151 Nutrition and Dietetics 1 and BI 216 Human Anatomy & Physiology 1.

 **II. Student Learning Objectives/Outcomes:**

1. Students will be able to apply and critically analyze human systems theory and life course development as it relates to human life cycle.
2. Students will be able to understand the fundamental principles of optimal dietary behaviors during pregnancy, lactation, infancy, childhood, and adolescence.
3. Students will be able to evaluate the physiological, psychological and sociological changes associated with adulthood and aging.
4. Students will be able to assess the role of nutrients and dietary behaviors as they relate to the development of chronic diseases.
5. Students will be able to articulate effective strategies to promote optimal health and well-being, as well as quality of life and longevity.
6. Students will be able to critically evaluate difficulties and controversies associated with various dietary behaviors during different life stages.

**Topic Outline**

**Major Topics**

Week 1: Nutrition Principles and Dietary Guidelines - macronutrients and micronutrients review, review of dietary guidelines, anthropometric measurements, Nutrition Care Plans.

Week 2: Preconception Nutrition - effects of nutrition-related factors on fertility in females and males, relationship between preconceptional nutritional status and pregnancy outcome, hormones involved in the regulation of fertility processes, nutritional-related consequences of hormonal contraceptives.

Week 3-4: Nutrition During Pregnancy - growth & development during pregnancy, nutrition during pregnancy, exercise during pregnancy, nutrition status during pregnancy and long-term health outcome in offspring, Nutrition Care Plans during pregnancy, nutrition-related disorders during pregnancy, alcohol intake during pregnancy, differences in energy and nutrient needs between adult and adolescent pregnancies, energy and nutrient needs of multifetal pregnancies

Week 5-6: Nutrition During Lactation – nutrient recommendations during lactation, nutrient levels in colostrum, human milk, cow’s milk, and human milk substitutes, breastfeeding education, Nutrition Care Plans during lactation, infant vitamin supplementation during lactation, hyperbilirubinemia and kernicterus

Week 7-8: Nutrition During Infancy - growth and development during infancy, infancy nutritional assessment and intervention, infant nutrition and long-term health consequences, infancy nutrition with special health care needs, nutrition resources and services for families.

Week 9-10: Toddler and Preschool Nutrition - growth & development during toddler/preschool years, energy and nutrient needs, nutrition and behavior, food choices and eating habits, nutritional assessment and intervention during the toddler/preschool years.

Week 11: Child and Preadolescence Nutrition – growth & development during childhood, childhood nutrition and behavior, childhood food choices and eating habits, childhood obesity, prevention of dental caries, childhood nutritional assessment and intervention.

Week 12-13: Adolescent Nutrition - growth & development during adolescence, sexual maturation and biological maturity and nutritional needs, adolescent behavior/environment and nutrition, adolescent nutritional assessment and intervention, disordered eating versus eating disorders, adolescent obesity and prevention, nutrition and adolescent athletes.

Week 14: Adult Nutrition – nutrition and development of chronic disease, nutrition and physical activity, nutritional assessment of adults, metabolic syndrome, diabetes, and obesity.

Week 15: Older Adult Nutrition – nutritional and physiological changes that occur in older adults, nutrient recommendations, functional status versus chronological age, life expectancy and life span, chronic diseases of older adults, underweight and overweight older adults, common gastrointestinal problems, dehydration, nutritional strategies.