Course Title: Nutrition and Dietetics

Course Number: BI 151

Pre-Requisites: High School Chemistry or Equivalent

Credits: 3

Contact Hours: 3

1. **Course Description:**

This course provides a general understanding of the science of nutrition. Topic include nutrients, nutrient requirements, food sources, food safety, dietary assessment, the role that nutrients play in maintaining health and physical well-being, and physiological functions such as digestion and absorption and metabolism of nutrients. This course is for Nutrition and Dietetics majors. Prerequisite: high school chemistry or equivalent.

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

1. Students will be able to identify and define the six basic nutrients and apply learned knowledge to the analysis and planning of adequate and balanced diets.

2. Students will be able to calculate food intake and its effect on energy balance and weight control.

3. Students will be able to identify the structure and function of the digestive system and accessory organs.

4. Students will be able to demonstrate a working knowledge of the scientific basis of human nutrition as it relates to cellular physiology and body system function.

5. Students will be able to assess nutritional problems humans contend with and the basis for wise food choices.

6. Students will be able to use current information technologies such as ChooseMyPlate.gov and eatrightpro.org to locate and apply evidence-based guidelines and protocols.

7. Students will be able to calculaterecommended dietary allowances and nutrient intakes, and determine illnesses and/or symptoms that occur due to specific nutrient deficiencies and excesses.

8. Students will be able to demonstrate knowledge of the causes of health and sickness due to food preservation and preparation.

9. Students will be able to locate, interpret, evaluate and use professional literature to make ethical, evidence-based practice decisions.

**Topic Outline**

**Major Topics**

Week 1: The Science of nutrition – macronutrients, micronutrients, cultural and social influences, hunger versus appetite, the scientific method.

Week 2: Dietary standards – AMDR, RDA, DV, ChooseMyPlate.org, Dietary Guidelines, Food labeling.

Week 3: The food supply and food safety, food security.

Week 4: Digestion and absorption.

Week 5: Carbohydrates – structure and function, polysaccharides, disaccharides, monosaccharide, nutritive and nonnutritive sweeteners, carbohydrate digestion and absorption, lactose intolerance, diabetes.

Week 6: Lipids – structure and functions, triglycerides, phospholipids, sterols, fat digestion and absorption, cholesterol in the body, cardiovascular disease.

Week 7: Proteins - protein structure and functions, nitrogen balance, gluconeogenesis, protein malnutrition.

Week 8: Alcohol – absorption, metabolism, fetal alcohol syndrome.

Week 9: Energy metabolism – ATP production from carbohydrates, lipids, proteins, and alcohol.

Week 10: Energy balance – weight control, anthropometric measurements, eating disorders and disordered eating.

Week 11: Nutrition and exercise.

Week 12: Fat-soluble vitamins.

Week 13: Water-soluble vitamins.

Week 14: Water and major minerals.

Week 15: Trace minerals

Reviewed 2018