**Virginia Western Community College**

 **DNH 150**

 **NUTRITION**

**Prerequisites**

BIO 141/142, DNH 111, DNH 115, DNH 120, DNH 141, DNH 142, DNH 145, DNH 146, DNH 216

**Course Description**

Studies nutrition as it relates to dentistry and general health. Emphasizes the principles of nutrition as applied to the clinical practice of dental hygiene.

**Semester Credits: 2 Lecture Hours: 2**

**Required Materials**

**Textbook:**

Whitney, Eleanor and Sizer, Fancis, Nutrition – Concepts and Controversies, (15th edition), Wadsworth Publishing, 2020. ISBN – 978-1337906371

**Course Outcomes**

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

1. To provide a basic foundation in the science of nutrition and the role of nutrition in the prevention and control of dental disease.
2. Demonstrate a knowledge of basic nutrition principles by:
3. Discussing the chemistry, functions, requirements, food sources and deficiency disorders associated with each major nutrient.
4. Recognizing intra-orally the effects of nutrients, diet and eating patterns on oral health.
5. Distinguishing between nutritional requirements for each stage of the life cycle.
6. To recognize the influence of cultural, socioeconomic and psychological factors on the dietary patterns and habits of clients.
7. To examine the nutritional needs of clients during specific stages of growth and development, such as: infancy and childhood, adolescence and old age.
8. To assess the nutritional needs of special clients, such as the orally, physically, and mentally handicapped, the diabetic, the pregnant, and the post-operative client.
9. Demonstrate the skills needed to plan, implement and evaluate nutrition education/analysis sessions with clients, including:
10. an adequate diet recall, and assessment of overall dietary adequacy
11. recognition of behavioral factors affecting food choices
12. discussion of diet and dental diseases/caries risk assessment
13. recommendations for dietary improvements
14. To increase awareness of the anticipated changes in food production, and need for research in seeking answers to nutritional needs for the future.

**Topical Description**

UNIT 1: FOOD CHOICES AND HUMAN HEALTH, NUTRITION STANDARDS AND GUIDELINES, THE REMARKABLE BODY, AND CARBOHYDRATES – WEEKS 1-3

1. The Diet and Health Connection
2. Healthy People 2010: Nutrition for the Nation
3. The Human Body and Its Food
4. The Science of Nutrition
5. Nutrient Recommendations
6. Dietary Guidelines for Americans
7. Diet Planning with the USDA Food Guide
8. The Body’s Cells
9. Body Fluids and the Cardiovascular System
10. Hormonal and Nervous Systems
11. The Immune System
12. The Digestive System
13. Excretory System
14. A Close Look at Carbohydrates
15. The Need for Carbohydrates
16. From Carbohydrates to Glucose
17. Refined, Enriched, and Whole-Grain Foods
18. The Body’s Use of Glucose
19. Diabetes
20. Management of Diabetes
21. Hypoglycemia

UNIT 2: THE LIPIDS: FATS, OILS, PHOSPHOLIPIDS, AND STEROLS, THE PROTEINS AND AMINO ACIDS, AND THE VITAMINS – WEEKS 3-6

1. Introducing the Lipids
2. Usefulness of Fats in the Body
3. Usefulness of Fats in Food
4. Triglycerides: Fatty Acids and Glycerol
5. Saturated Versus Unsaturated Fatty Acids
6. Phospholipids and Sterols
7. Digestion and Absorption of Fats
8. Transport of Fats
9. Storage and Usage of Body Fats
10. Dietary Fat, Cholesterol and Health
11. Essential Polyunsaturated Fatty Acids
12. Processing on Unsaturated Fats
13. The Structure of Proteins
14. Variety of Proteins
15. Denaturation of Proteins
16. Digestion and Absorption of Dietary Protein
17. Roles of Body Proteins
18. Amino Acids to Glucose
19. Food Protein: Need and Quality
20. Nitrogen Balance
21. Protein Deficiency and Excess
22. Definition and Classification of Vitamins
23. Fat Soluble Vitamins: Vitamins A, D, E, K; Roles and Consequences of Deficiency
24. Water Soluble Vitamins: Vitamins B and C; Roles and Consequences of Deficiency

UNIT 3: WATER AND MINERALS, ENERGY BALANCE AND HEALTHY BODY WEIGHT, NUTRIENTS’ PHYSICAL ACTIVITY AND THE BODY’S RESPONSE – WEEKS 6-8

1. Why Water is the Most Indispensable Nutrient
2. The Body’s Water Balance
3. Safety and Sources of Drinking Water
4. Body Fluids and Minerals
5. The Major Minerals: Roles in the Body, Deficiencies and Toxicities
6. The Trace Minerals: Roles in the Body, Deficiencies and Toxicities
7. The Problems of Too Little or Too Much Body Fat
8. Risks from Central Obesity
9. The Body’s Energy Balance
10. Energy In and Energy Out
11. Estimating Energy Requirements
12. Body Weight Versus Body Fatness
13. Body Mass Index
14. Measures of Body Composition and Fat Distribution
15. Hunger and Appetite
16. Inside and Outside the Body Causes of Obesity
17. How the Body Gains and Loses Weight
18. Achieving and Maintaining a Healthy Body Weight
19. Eating Disorders
20. Benefits of Fitness
21. Physical Activity Guidelines
22. The Essentials of Fitness
23. The Active Body’s Use of Fuels
24. Vitamins and Minerals – Keys to performance
25. Fluids and Temperature Regulation in Physical Activity

UNIT 4: DIET AND HEALTH, ORAL MANIFESTATIONS OF NUTRIENT DEFICIENCIES, LIFE STYLE NUTRITION-MOTHER AND INFANT, CHILD AND TEEN, OLDER ADULT – WEEKS 8-10

1. Nutrition and Immunity
2. The Concept of Risk Factors
3. Cardiovascular Diseases
4. Nutrition and Hypertension
5. Nutrition and Cancer
6. Dental Caries: Primary Factors to Consider
7. Periodontal Diseases: Systemic and Behavioral Risk Factors
8. Nutritional Guidance: Determining the Need and Developing a Plan
9. Pregnancy: The Impact of Nutrition on the Future
10. Increased Need for Nutrients During Pregnancy
11. Weight Loss After Pregnancy
12. Teen Pregnancy
13. Alcohol and Pregnancy
14. Lactation
15. Feeding the Infant
16. Feeding a Healthy Young Child
17. Mealtimes and Snacking
18. Nutrient Deficiencies and Brain Impairment
19. Food Allergy, Intolerance, and Aversion
20. Nutrition in Adolescence
21. Eating Patterns and Nutrient Intakes
22. The Later Years
23. Energy and Activity
24. Protein Needs; Carbohydrates and Fiber; Fats and Arthritis; Vitamin Needs, Water and the Minerals
25. Food Choices of Older Adults