ILLINOIS VALLEY COMMUNITY COLLEGE

COURSE OUTLINE

DIVISION: Workforce Development

COURSE: DLH 1204 Nutrition and Dental Health

Date: Spring 2021

Credit Hours: 1

Prerequisite(s): Acceptance into the Dental Hygiene A.A.S. Degree

Delivery Method:

☒ **Lecture**	**1 Contact Hours**	**(1 contact = 1 credit hour)**
☐ **Seminar**	**0 Contact Hours**	**(1 contact = 1 credit hour)**
☐ **Lab**	**0 Contact Hours**	**(2-3 contact = 1 credit hour)**
☐ **Clinical**	**0 Contact Hours**	**(3 contact = 1 credit hour)**
☐ **Online**		
☐ **Blended**		

Offered: ☒ **Fall** ☐ **Spring** ☐ **Summer**

IAI Equivalent –***Only for Transfer Courses***-go to *http://www.itransfer.org*:

CATALOG DESCRIPTION:
This course is an introduction to the science of nutrition and its applications on a personal, professional, and community level with importance on its application to dentistry. Students are presented to the analysis of diets, to the evaluation and use of nutritional reference and educational resources, and to patient counseling skills.

GENERAL EDUCATION GOALS ADDRESSED

[See last page for Course Competency/Assessment Methods Matrix.]

Upon completion of the course, the student will be able:

[Choose up to three goals that will be formally assessed in this course.]

☐ To apply analytical and problem solving skills to personal, social, and professional issues and situations.
☒ To communicate successfully, both orally and in writing, to a variety of audiences.
☐ To construct a critical awareness of and appreciation for diversity.
☐ To understand and use technology effectively and to understand its impact on the individual and society.
☐ To develop interpersonal capacity.
☐ To recognize what it means to act ethically and responsibly as an individual and as a member of society.
☒ To recognize what it means to develop and maintain a healthy lifestyle in terms of mind, body, and spirit.
☒ To connect learning to life.

EXPECTED LEARNING OUTCOMES AND RELATED COMPETENCIES:

[Outcomes related to course specific goals. See last page for more information.]

Upon completion of the course, the student will be able to:

1. Discuss orientation to basic nutrition
   - 1.1. Explain an overview of health eating habits
   - 1.2. Discuss concepts in Biochemistry
   - 1.3. Discuss the alimentary canal
   - 1.4. Discuss carbohydrate
   - 1.5. Define proteins
   - 1.6. Describe lipids
   - 1.7. Explain the use of the energy nutrients
   - 1.8. Discuss vitamins required for calcified structures
   - 1.9. Discuss minerals essential for calcified structures
   - 1.10. Describe nutrients present in calcified structures
   - 1.11. Describe vitamins required for oral soft tissues and salivary glands
   - 1.12. Explain fluids and minerals required for oral soft tissues and salivary glands
2. Discuss the application of nutrition principles
   - 2.1. Describe nutritional requirements affecting oral health in women
   - 2.2. Explain nutritional requirements during growth and development and eating habits affecting oral health
   - 2.3. Discuss nutritional requirements for older adults and eating habits affecting oral health
   - 2.4. Discuss food factors affecting health
   - 2.5. Explain effects of systemic disease on nutritional status and oral health
3. Discuss nutrition aspects of oral health
   - 3.1. Describe nutritional aspects of dental caries causes, prevention, and treatment

3.2. Describe nutritional aspects of gingivitis and periodontal disease
3.3. Discuss nutritional aspects of alterations in the oral cavity
3.4. Demonstrate nutritional assessment and education for dental patients

MAPPING LEARNING OUTCOMES TO GENERAL EDUCATION GOALS

[For each of the goals selected above, indicate which outcomes align with the goal.]

Goals	Outcomes
First Goal	
To communicate successfully, both orally and in writing, to a variety of audiences.	3.2 Demonstrate nutritional assessment and education for dental patients
Second Goal	
To recognize what it means to develop and maintain a healthy lifestyle in terms of mind, body, and spirit.	2.2 Explain nutritional requirements during growth and development and eating habits affecting oral health
Third Goal	
To connect learning to life.	3.3 Discuss nutritional aspects of alterations in the oral cavity

COURSE TOPICS AND CONTENT REQUIREMENTS:

I. Orientation to Basic Nutrition
   a. Overview of Healthy Eating Habits
      i. Basic Nutrition
      ii. Physiologic Functions of Nutrients
      iii. Basic Concepts of Nutrition
      iv. Government Nutrition Concerns
      v. Nutrient Recommendations: Dietary Reference Intakes
      vi. Food Guidance System for Americans
      vii. Support Healthy Eating Patterns for All
      viii. MyPlate System
      ix. Other Food Guides
      x. Nutrition Labeling
   b. Concepts in Biochemistry
      i. What is Biochemistry?
      ii. Fundamentals of Biochemistry
      iii. Principle Biomolecules in Nutrition
      iv. Summary of Metabolism
   c. The Alimentary Canal
      i. Physiology of the Gastrointestinal Tract
      ii. Oral Cavity
      iii. Esophagus
      iv. Gastric Digestion

v. Small Intestine
vi. Large Intestine

d. Carbohydrate
   i. Classification
   ii. Physiologic Roles
   iii. Requirements
   iv. Sources
   v. Hyperstates and Hypostates
   vi. Nonnutritive Sweeteners/Sugar Substitutes

e. Protein
   i. Amino Acids
   ii. Classification
   iii. Physiologic Roles
   iv. Requirements
   v. Sources
   vi. Underconsumption and Health-Related Problems
   vii. Overconsumption and Health-Related Problems

f. Lipids
   i. Classification
   ii. Chemical Structure
   iii. Characteristics of Fatty Acids
   iv. Compound Lipids
   v.
   vi. Cholesterol
   vii. Physiologic Roles
   viii. Dietary Fats and Dental Health
   ix. Dietary Requirements
   x. Sources
   xi. Overconsumption and Health-Related Problems
   xii. Underconsumption and Health-Related Problems
   xiii. Fat Replacers

g. Use of the Energy Nutrients
   i. Metabolism
   ii. Role of the Liver
   iii. Role of the Kidneys
   iv. Carbohydrate Metabolism
   v. Protein Metabolism
   vi. Lipid Metabolism
   vii. Alcohol Metabolism
   viii. Metabolic Interrelationships
   ix. Metabolic Energy
   x. Basal Metabolic Rate
   xi. Total Energy Requirements
   xii. Energy Balance
   xiii. Inadequate Energy Intake

h. Vitamins Required for Calcified Structures
   i. Overview of Vitamins
   ii. Vitamin A (Retinol, Carotene)
   iii. Vitamin D (Calciferol)

iv. Vitamin E (Tocopherol)
v. Vitamin K (Quinone)
vi. Vitamin C (Ascorbic Acid)

i. Minerals Essential for Calcified Structures
i. Bone Mineralization and Growth
ii. Formation of Teeth
iii. Introduction to Minerals
iv. Calcium
v. Phosphorus
vi. Magnesium
vii. Fluoride

j. Nutrients Present in Calcified Structures
i. Copper
ii. Selenium
iii. Chromium
iv. Manganese
v. Molybdenum
vi. Ultratrace Elements

k. Vitamins Required for Oral Soft Tissues and Salivary Glands
i. Physiology of Soft Tissues
ii. Thiamin (Vitamin B1)
iii. Riboflavin (Vitamin B2)
iv. Niacin (Vitamin B3)
v. Pantothenic Acid (Vitamin B5)
vi. Vitamin B6 (Pyridoxine)
vii. Folate/Folic Acid (Vitamin B9)
viii. Vitamin B12 (Cobalamin)
ix. Biotin (Vitamin B7)
x. Other Vitamins

l. Fluids and Minerals Required for Oral Soft Tissues and Salivary Glands
i. Fluids
ii. References
iii. Electrolytes
iv. Sodium
v. Chloride
vi. Potassium
vii. Iron
viii. Zinc
ix. Iodine

II. Application of Nutrition Principles
a. Nutritional Requirements Affecting Oral Health in Women
i. Healthy Pregnancy
ii. Lactation
iii. Oral Contraceptive Agents
iv. Menopause

b. Nutritional Requirements During Growth and Development and Eating Habits Affecting Oral Health
i. Infants

ii. Children Older Than 2 Years of Age: Dietary Guidelines 2015–2020 and Healthy People 2020
iii. Utilizing the ChooseMyPlate Website
iv. Toddler and Preschool Children
v. Attention-Deficit/Hyperactivity Disorder
vi. Children With Special Needs
vii. School-Age Children (7–12 Years Old)
viii. Adolescents

c. Nutritional Requirements for Older Adults and Eating Habits Affecting Oral Health
i. General Health Status
ii. Physiologic Factors Influencing Nutritional Needs and Status
iii. Socioeconomic and Psychological Factors
iv. Nutrient Requirements
v. Eating Patterns
vi. Dietary Guidelines and MyPlate for Older Adults

d. Food Factors Affecting Health
i. Health Care Disparities
ii. Food Patterns
iii. Working With Patients With Different Food Patterns
iv. Food Budgets
v. Maintaining Optimal Nutrition During Food Preparation
vi. Food Fads and Misinformation
vii. Referrals for Nutritional Resources
viii. Role of Dental Hygienists

e. Effects of Systemic Disease on Nutritional Status and Oral Health
i. Effects of Chronic Disease on Intake
ii. Anemias
iii. Other Hematologic Disorders
iv. Gastrointestinal Problems
v. Cardiovascular Conditions
vi. Skeletal System
vii. Metabolic Problems
viii. Neuromuscular Problems
ix. Neoplasia
x. Acquired Immunodeficiency Syndrome (AIDS)
xi. Mental Health Problems

III. Nutritional Aspects of Oral Health

a. Nutritional Aspects of Dental Caries
i. Major Factors in the Dental Caries Process
ii. Other Factors Influencing Cariogenicity
iii. Dental Hygiene Care Plan

b. Nutritional Aspects of Gingivitis and Periodontal Disease
i. Physical Effects of Food on Periodontal Health
ii. Nutritional Considerations for Periodontal Patients
iii. Gingivitis
iv. Chronic Periodontitis
v. Necrotizing Periodontal Diseases

c. Nutritional Aspects of Alterations in the Oral Cavity
i. Orthodontics

ii. Xerostomia
iii. Root Caries and Dentin Hypersensitivity
iv. Dentition Status
v. Oral and Maxillofacial Surgery
vi. Loss of Alveolar Bone
vii. Glossitis
viii. Temporomandibular Disorder

d. Nutritional Assessment and Education for Dental Patients
i. Evaluation of the Patient
ii. Assessment of Nutritional Status
iii. Identification of Nutritional Status
iv. Formation of Nutrition Treatment Plan
v. Facilitative Communication Skills

INSTRUCTIONAL METHODS:

- Lecture
- Power Points
- Class discussion
- Demonstration
- Visual aids - videos, models, slides
- Exams and quizzes
- Problem solving exercises

INSTRUCTIONAL MATERIALS:

Stegeman, C., & Davis, J. (2018). *The Dental Hygienist's Guide to Nutritional Care* (5th ed.). Elsevier.

STUDENT REQUIREMENTS AND METHODS OF EVALUATION:

The following grading scale will be used as a guide in determining the final grade for this course:

A= 92-100
B= 83-91
C= 75-82
D= 68-74
F= 67 and below

OTHER REFERENCES

Blue, C. M. (2017). *Darby's Comprehensive Review of Dental Hygiene* (8th ed.). Elsevier Inc.

Bowen, D. M., & Pieren, J. A. (2019). *Darby and Walsh Dental Hygiene: Theory and Practice,* (5th ed.). Elsevier Inc.