



ILLINOIS VALLEY COMMUNITY COLLEGE

COURSE OUTLINE

DIVISION: Health Professions

COURSE: DLH 1204 Nutrition and Dental Health

Date: Spring 2024

Credit Hours: 1

Complete all that apply or mark "None" where appropriate:

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

Enrollment by assessment or other measure? Yes No

If yes, please describe:

Corequisite(s): None

Pre- or Corequisite(s): None

Consent of Instructor: Yes No

Delivery Method:	<input checked="" type="checkbox"/> Lecture	1 Contact Hours (1 contact = 1 credit hour)
	<input type="checkbox"/> Seminar	0 Contact Hours (1 contact = 1 credit hour)
	<input type="checkbox"/> Lab	0 Contact Hours (2-3 contact = 1 credit hour)
	<input type="checkbox"/> Clinical	0 Contact Hours (3 contact = 1 credit hour)

Offered: **Fall** **Spring** **Summer**

CATALOG DESCRIPTION and IAI NUMBER (if applicable): This course builds on materials presented in DLA 1205 Preventive and Nutritional Care. This course introduces 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.

ACCREDITATION STATEMENTS AND COURSE NOTES:

- Standard 2: Educational Program:
 - Curriculum:
 - The curriculum must include content in the following four areas: general education, biomedical sciences, dental sciences, and dental hygiene science. This content must be integrated and of sufficient depth, scope, sequence of instruction, quality, and emphasis to ensure achievement of the curriculum's defined competencies. A curriculum document must be submitted for each course included in the dental hygiene program for all four content areas.
 - General education content must include oral and written communications, psychology, and sociology. (2-8a)
 - Biomedical science content must include content in anatomy, physiology, chemistry, biochemistry, microbiology, immunology, general and maxillofacial pathology and/or pathophysiology, nutrition, and pharmacology. (2-8b)
 - Dental sciences content must include tooth morphology, head, neck and oral anatomy, oral embryology and histology, oral pathology, radiography, periodontology, pain management, and dental materials. (2-8c)
 - Dental hygiene science content must include oral health education and preventive counseling, health promotion, patient management, clinical dental hygiene, provision of services for and management of patients with special needs, community dental/oral health, medical and dental emergencies, legal and ethical aspects of dental hygiene practice, infection and hazard control management, and the provision of oral health care services to patients with bloodborne infectious diseases. (2-8d)
 - The basic clinical education aspect of the curriculum must include a formal course sequence in scientific principles of dental hygiene practice, which extends throughout the curriculum and is coordinated and integrated with clinical experience in providing dental hygiene services. (2-9)
 - Patient Care Competencies:
 - Graduates must be competent in providing dental hygiene care for the child, adolescent, adult, and geriatric patient. Graduates must be competent in assessing the treatment needs of patients with special needs. (2-12)
 - Graduates must be competent in providing the dental hygiene process of care which includes:
 - Comprehensive collection of patient data to identify the physical and oral health status (2-13a)
 - Analysis of assessment findings and use of critical thinking in order to address the patient's dental hygiene treatment needs (2-13b)
 - Establishment of a dental hygiene care plan that reflects the realistic goals and treatment strategies to facilitate optimal oral health (2-13c)
 - Provision of patient-centered treatment and evidence-based care in a manner minimizing risk and optimizing oral health (2-13d)
 - Measurement of the extent to which goals identified in the dental hygiene care plan are achieved (2-13e)
 - Complete and accurate recording of all documentation relevant to patient care. (2-13f)

- Graduates must be competent in providing dental hygiene care for all types of classifications of periodontal disease, including patients who exhibit moderate to severe periodontal disease. (2-14)
- Graduates must be competent in communicating and collaborating with other members of the health care team to support comprehensive patient care. (2-15)
- Graduates must demonstrate competence in:
 - Assessing the oral health needs of community-based programs (2-16a)
 - Planning an oral health program to include health promotion and disease prevention activities (2-16b)
 - Implementing the planned program (2-16c)
 - Evaluating the effectiveness of the implemented program. (2-16d)
- Ethics and Professionalism:
 - Graduates must be competent in the application of the principles of ethical reasoning, ethical decision making, and professional responsibility as they pertain to the academic environment, research, patient care, and practice management. (2-19)
 - Graduates must be competent in applying legal and regulatory concepts to the provision and/or support of oral health care services. (2-20)
- Critical Thinking:
 - Graduates must be competent in the evaluation of current scientific literature. (2-22)
 - Graduates must be competent in problem solving strategies related to comprehensive patient care and management of patients. (2-23)

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. Cholesterol
 - vi. Physiologic Roles
 - vii. Dietary Fats and Dental Health
 - viii. Dietary Requirements
 - ix. Sources
 - x. Overconsumption and Health-Related Problems
 - xi. Underconsumption and Health-Related Problems
 - xii. 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
 - I. 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 Carcinogenicity

- 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:

- Traditional Lecture
- Flipped Classroom
- Slide Presentations
- Class discussion
- Demonstration
- Visual aids - videos, models, slides
- Exams and quizzes
- Problem solving exercises

EVALUATION OF STUDENT ACHIEVEMENT:

- Examinations and homework will be used to evaluate student progress.
- Various projects will be assigned throughout the semester and must be completed with a 'C' or higher in order to successfully complete the course.
- A grade of "C" is required for graduation from the Dental Hygiene Program. 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

INSTRUCTIONAL MATERIALS:

Textbooks

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

Resources

LEARNING OUTCOMES AND GOALS:

Institutional Learning Outcomes

- 1) Communication – to communicate effectively;
- 2) Inquiry – to apply critical, logical, creative, aesthetic, or quantitative analytical reasoning to formulate a judgement or conclusion;
- 3) Social Consciousness – to understand what it means to be a socially conscious person, locally and globally;
- 4) Responsibility – to recognize how personal choices affect self and society.

Course Outcomes and Competencies

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

1. Discuss orientation to basic nutrition
 - a. Explain an overview of health eating habits
 - b. Discuss concepts in Biochemistry
 - c. Discuss the alimentary canal
 - d. Discuss carbohydrate
 - e. Define proteins
 - f. Describe lipids
 - g. Explain the use of the energy nutrients
 - h. Discuss vitamins required for calcified structures
 - i. Discuss minerals essential for calcified structures
 - j. Describe nutrients present in calcified structures
 - k. Describe vitamins required for oral soft tissues and salivary glands
 - l. Explain fluids and minerals required for oral soft tissues and salivary glands
2. Discuss the application of nutrition principles
 - a. Describe nutritional requirements affecting oral health in women
 - b. Explain nutritional requirements during growth and development and eating habits affecting oral health
 - c. Discuss nutritional requirements for older adults and eating habits affecting oral health
 - d. Discuss food factors affecting health
 - e. Explain effects of systemic disease on nutritional status and oral health
3. Discuss nutrition aspects of oral health
 - a. Describe nutritional aspects of dental caries causes, prevention, and treatment
 - b. Describe nutritional aspects of gingivitis and periodontal disease
 - c. Discuss nutritional aspects of alterations in the oral cavity
 - d. Demonstrate nutritional assessment and education for dental patients