



# **ILLINOIS VALLEY COMMUNITY COLLEGE**

## **COURSE OUTLINE**

**DIVISION: Workforce Development**

**COURSE: DLA 1205 Preventive and Nutritional Care**

Date: Spring 2023

Credit Hours: 1.5

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

Prerequisite(s): Acceptance into the Dental Assisting Program or Administrative Assistant Certificate

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"/> <b>Lecture</b>	<b>1.5 Contact Hours</b> (1 contact = 1 credit hour)
	<input type="checkbox"/> <b>Seminar</b>	<b>0 Contact Hours</b> (1 contact = 1 credit hour)
	<input type="checkbox"/> <b>Lab</b>	<b>0 Contact Hours</b> (2-3 contact = 1 credit hour)
	<input type="checkbox"/> <b>Clinical</b>	<b>0 Contact Hours</b> (3 contact = 1 credit hour)

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

### **CATALOG DESCRIPTION and IAI NUMBER (if applicable):**

This course includes discussion on the causes and treatments of dental caries and periodontal disease with emphasis on diet, nutrition, proper home care, preventative agents, and the dental auxiliary's role in prevention. An overview of healthy eating habits, as well as an exploration of nutritional aspects in dentistry, provide the basis for oral hygiene instruction. Personal oral health is stressed, and students will prepare and present programs to patients regarding personal oral hygiene.

## **ACCREDITATION STATEMENTS AND COURSE NOTES:**

### **Dental Assisting Accreditation Notes:**

#### Standard 2: Educational Program:

- Curriculum
  - Curriculum content must include didactic and laboratory/preclinical objectives in the following dental assisting skills and functions. Prior to performing these skills/functions in a clinical setting, students must demonstrate knowledge of, and laboratory/preclinical competence in the program facility.
    - c. Assist with and/or apply fluoride agents (2-10c)
    - l. Provide patient preventive education and oral hygiene instruction (2-9l)
  - The dental science aspect of the curriculum must include content at the familiarity level in:
    - Nutrition (2-14d)
  - The curriculum must include didactic content at the in-depth level to include:
    - Preventive dentistry (2-19e)

### **Dental Hygiene Accreditation 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)
- Critical Thinking:
  - Graduates must be competent in problem-solving strategies related to comprehensive patient care and management of patients. (2-23)

## **COURSE TOPICS AND CONTENT REQUIREMENTS:**

1. Oral Health and Preventive Techniques
  - a. Plaque Formation
  - b. Patient Motivation
  - c. Age Characteristics
  - d. Home Care
2. Dental Deposits
  - a. Dental Deposits
    - i. Dental deposits: soft
      1. Microorganisms within oral biofilm
      2. Stages of oral biofilm formation
      3. Materia alba and food debris
    - ii. Skill, motivation, and compliance
    - iii. Clinical assessment of oral biofilm
      1. Disclosing agents
      2. Assessment
    - iv. Dental Deposits: Hard
      1. Calculus Formation
    - v. Dental Deposits: Tooth Stains

- b. Dental Deposit Assessment
      - i. Deposit assessment armamentarium
      - ii. Concepts for oral hygiene assessment
    - c. Oral hygiene indices
      - i. Indices used for assessing oral deposits
    - d. Record Keeping and Documentation
  - 3. Overview of Healthy Eating Habits
    - a. Basic Nutrition
    - b. Physiologic Functions of Nutrients
    - c. Basic Concepts of Nutrition
    - d. Government Nutrition concerns
      - i. Healthy People Nutrition Objectives
    - e. Nutrient Recommendations: Dietary Reference Intakes
    - f. Food Guidance System for Americans
      - i. 2015-2020 Dietary Guidelines for Americans
      - ii. Key Recommendations for Healthy Eating Patterns
        - 1. Calorie Balance
        - 2. Vegetables
        - 3. Fruits
        - 4. Grains
        - 5. Dairy
        - 6. Protein
      - iii. Highlight of Nutrient Dense Foods
      - iv. Nutrients to Limit
      - v. Other Dietary Components
      - vi. Physical Activity guidelines
    - g. Support Healthy eating Patterns for all
    - h. MyPlate System
    - i. Other Food Guides
    - j. Nutrition Labeling
  - 4. Dental caries
    - a. Definition of caries
    - b. Dental caries process
      - i. Demineralization
      - ii. Remineralization
    - c. White spot lesion
    - d. Risk factors
    - e. Protective factors
    - f. Baby bottle tooth decay
  - 5. Nutritional Aspects of Dental Caries: causes, Prevention, and Treatment
    - a. Major factors in the dental caries process
      - i. Tooth structure
      - ii. Host factors
      - iii. Saliva
      - iv. Plaque biofilm and its bacterial components
      - v. Cariogenic foods

- vi. Cariostatic/noncariogenic properties of food
  - b. Other factors influencing cariogenicity
    - i. Physical form
    - ii. Frequency of intake
    - iii. Timing and sequence in a meal
  - c. Dental Hygiene Care Plan
    - i. Assessment
    - ii. Goals
    - iii. Education
- 6. Periodontal disease
  - a. Risk factors
    - i. Modifiable
    - ii. Nonmodifiable
  - b. Assessment instruments
  - c. Periodontal screening
  - d. Healthy periodontium
  - e. Clinical appearance of gingiva
  - f. Disease periodontium
    - i. Gingivitis
    - ii. Periodontitis
  - g. Immunopathology
  - h. Signs of gingival disease
    - i. Gingivitis
    - ii. Periodontitis
  - i. Radiographs
- 7. Nutritional Aspects of Gingivitis and Periodontal Disease
  - a. Physical Effects of Food on Periodontal Health
    - i. Food composition
    - ii. Food consistency
  - b. Nutritional Considerations for Periodontal Patients
  - c. Gingivitis
  - d. Chronic Periodontitis
    - i. Periodontal Surgery
  - e. Necrotizing Periodontal Diseases
- 8. Nutritional Aspects of Alterations in the Oral Cavity
  - a. Orthodontics
  - b. Xerostomia
  - c. Root Caries and Dentin Hypersensitivity
  - d. Dentition Status
  - e. Oral and Maxillofacial Surgery
  - f. Loss of Alveolar Bone
  - g. Glossitis
  - h. Temporomandibular Disorder
- 9. Nutritional Assessment and Education for Dental Patients
  - a. Evaluation of the Patient
    - i. Health History

- ii. Psychosocial History
    - iii. Dental History
  - b. Assessment of Nutritional Status
    - i. Clinical Observation
    - ii. Laboratory Information
    - iii. Determining Diet History
  - c. Identification of Nutritional Status
  - d. Formation of Nutrition Treatment Plan
  - e. Facilitative Communication Skills
- 10. Preventive aids
  - a. Toothbrushing
    - i. Manual
      - 1. Parts of the toothbrush
    - ii. Power toothbrushes
    - iii. Toothbrushing Instruction
      - 1. Duration and frequency
      - 2. Pressure
    - iv. Methods
    - v. Softs and hard tissue lesions
    - vi. Tongue cleansing
  - b. Interdental and supplemental oral self-care devices
    - i. Selecting self-care devices
      - 1. Floss
        - a. Benefits
        - b. Type
        - c. Methods
        - d. Holders and threaders
      - 2. Water jets
      - 3. Brushes and tips
      - 4. Toothpicks, toothpick holders, and triangular toothpicks
      - 5. Rubber tip stimulators
      - 6. Tongue cleaners
      - 7. Additional devices
    - ii. Oral piercings
    - iii. Types of floss
  - c. Dentifrices
    - i. Purpose and definition
    - ii. Forms
    - iii. Components
      - 1. Non-medical ingredients
      - 2. Therapeutic effects, therapeutic agents, and medicinal ingredients
        - a. Desensitizing agents
    - iv. Adverse health effects
    - v. Patient recommendations
  - d. Mouth rinses
    - i. Cosmetic
    - ii. Therapeutic
- 11. Fluoride therapies

- a. Ingested fluoride
    - i. Community water fluoridation
    - ii. Fluoride in food and beverages
    - iii. Prescription fluoride supplements
    - iv. Toxicity
  - b. Topical fluoride
    - i. Self-applied OTC and prescription
      - 1. Rinses
      - 2. Gels and pastes
    - ii. Professionally applied
      - 1. Gel
      - 2. Foam
      - 3. Rinse
      - 4. Varnishes
  - c. Children and fluoride
  - d. Dentifrices/toothpastes
  - e. School-based programs
  - f. Acute fluoride toxicity
  - g. Non fluoride caries-preventative agents
    - i. Chlorhexidine
    - ii. Xylitol
    - iii. Amorphous calcium phosphate (ACP)
    - iv. Casein phosphopeptides-amorphous calcium phosphate (CPP-ACP)
      - 1. MI Paste
    - v. Calcium sodium phosphosilicate
    - vi. Tricalcium phosphate
    - vii. Sodium bicarbonate
    - viii. Probiotics
  - h. Xerostomia
12. Dentinal Hypersensitivity
- e. Etiology and nature
    - i. Hydrodynamic theory
  - f. Oral conditions associated with dentinal hypersensitivity
    - i. Causes of gingival recession
    - ii. Causes of enamel loss
    - iii. Additional causes
  - g. Prevalence
  - h. Diagnosis
    - i. Clinical criteria
    - ii. Radiographic criteria
    - iii. Additional testing
  - i. Management of dentinal hypersensitivity
    - i. Self-applied desensitizing agents
    - ii. Professionally applied desensitizing agents
      - 1. Varnishes
      - 2. Precipitants
      - 3. Primers

4. Polymerizing agents
  5. Iontophoresis
  6. Lasers
  7. Restorations
  8. Periodontal plastic surgery
13. Community dentistry
- j. Role of preventive dentistry
  - k. Special needs groups
  - l. Types of preventive programs
14. Tobacco Cessation
- m. Systemic health effects
  - n. Oral Health Effects
  - o. Successful Tobacco Cessation
    - i. Physical aspects of nicotine addiction
      1. Reinforcing agents
      2. Tolerance
      3. Physical dependence
    - ii. Psychological, behavioral, sensory, and sociocultural aspects
  - p. Helping Patients become tobacco-free
    - i. The Five A's approach
    - ii. Assisting clients who are not ready to quit
    - iii. Assisting clients who are ready to stop
  - q. Key Elements of Tobacco Cessation Treatment Programs
    - i. Assessment
    - ii. Setting a date
    - iii. Choosing a method
    - iv. Coping skills
    - v. Support
    - vi. Relapse prevention
    - vii. Follow up
  - r. U.S. Food and Drug Administration approved Pharmacological adjuncts
    - i. Nicotine replacement therapy
    - ii. Transdermal
    - iii. Nicotine polacrilex
    - iv. Nicotine lozenge
    - v. nicotine nasal spray
    - vi. Nicotine oral inhaler
    - vii. Combination therapy

**INSTRUCTIONAL METHODS:**

- Power Points
- Online discussions
- Hands-on Demonstration
- Blackboard
- Visuals aids - DVD, models, charts, video clips
- Computers - Internet research
- Research Project
- Patient Education Projects



## EVALUATION OF STUDENT ACHIEVEMENT:

- Examinations, role plays, skill competencies, and media recordings are 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 Assisting and Dental Hygiene Programs. The following grading scale will be used as a guide in determining the final grade for this course:

A = 90-100%

B = 80 - 89%

C = 70 - 79%

D = 60 - 69%

F = 0 - 59%

## INSTRUCTIONAL MATERIALS:

### Textbooks

Dental Assisting: A Comprehensive Approach, Fifth Edition, Phinney/Halstead, Cengage Learning, 2018.

Darby and Walsh Dental Hygiene Theory and Practice, Fifth Edition, Bowen/Pieren, Elsevier, 2020

The Dental Hygienist's Guide to Nutritional Care, fifth edition, Stegemen/Davis, Elsevier, 2019

### Resources

- [www.ADA.org](http://www.ADA.org)
- <http://www.choosemyplate.gov/>
- Harris, Norman O, Franklin Garcia-Godoy and Christine Nielsen Nathe. Primary Preventative Dentistry, 8th Edition. Pearson, 2014.
- Models and charts

## 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:

#### 1.0 Demonstrate a basic understanding of the scope of preventive dentistry.

- 1.1 Identify the need for preventive dentistry and discuss the cost of dental neglect.
- 1.2 Identify the two major types of dental disease, describe them, list the causes and solutions for each.

- 1.3 Explain how diagnosis, oral and dietary guidance, fluorides, restorative dentistry, recall programs, developmental guidance, and sports guards relate to the preventive dentistry program.
- 2.0 Demonstrate a basic understanding of concepts for oral hygiene assessment**
  - 2.1 Discuss soft dental deposits and oral biofilm, as well as microorganisms within oral biofilm and with patients the impact of dental deposits on oral health.
  - 2.2 Discuss hard dental deposits, including calculus formation
  - 2.3 Describe assessments of dental deposits and how essential they are for effective care planning
  - 2.4 Explain the responsibility of record keeping and documentation
- 3.0 Demonstrate a basic understanding of the overview of healthy eating habits**
  - 3.1 Discuss why dental hygienists and dental assistants need to be competent in assessing and providing basic nutritional education to patients.
  - 3.2 List and describe the general physiologic functions of the six nutrient classifications of foods.
  - 3.3 Discuss government concerns with nutrition, as well as the purpose and objectives of Healthy People 2020.
  - 3.4 Discuss Dietary Reference Intakes
  - 3.5 Describe healthy eating patterns, and discuss the importance of vegetables, fruits, dairy, protein foods, and oils.
  - 3.6 Discuss nutrients to limit, as well as other dietary components such as alcohol and caffeine.
  - 3.7 Describe how physical activity and physical fitness are important factors for an individual's overall health, and how healthful choices should be supported.
  - 3.8 Assess the dietary intake of a patients using the MyPlate system. Also, discuss other food guides and how they compare.
  - 3.9 Master how to read a nutritional label.
- 4.0 Demonstrate an understanding of tooth brushing, flossing, and the use of various oral hygiene aids.**
  - 4.1 Describe the purpose of brushing and flossing in the control of dental plaque.
  - 4.2 List and give uses for oral hygiene aids used to remove plaque.
  - 4.3 Explain the effects of poor tooth brushing techniques.
  - 4.4 Discuss dentifrices and mouth rinses, including types and composition
  - 4.5 List the various materials used for treating sensitive teeth and explain how desensitizing agents work.
- 5.0 Demonstrate a basic understanding of dental caries.**
  - 5.1 Describe the complete process of tooth decay.
  - 5.2 List factors which contribute to tooth decay.
  - 5.3 Describe the remineralization process of enamel and the conditions necessary for this process.
- 6.0 Demonstrate a basic understanding of the Nutritional Aspects of Dental Caries including the Causes, Prevention, and Treatment**
  - 6.1 Explain the role each of the following play in the caries process: tooth, saliva, food, and plaque biofilm.

- 6.2 Discuss cariogenic foods, as well as cariostatic and noncariogenic properties of food
- 6.3 List cariogenic food and beverages.
- 6.4 List examples of fermentable carbohydrates potentially increasing risk to dental health.
- 6.5 Identify foods that stimulate salivary flow.
- 6.6 Suggest food and beverage choices and their timing to reduce the cariogenicity of a patient's diet.
- 6.7 Describe characteristics of foods having noncariogenic or cariostatic properties.
- 6.8 Provide nutrition education to a patient at risk for dental caries.
- 7.0 Demonstrate a basic understanding of periodontal disease.**
  - 7.1 Identify reversible/non-reversible periodontal conditions.
  - 7.2 Discuss the strategies needed to prevent dental disease.
  - 7.3 Discuss the importance of the students' need for personal oral hygiene and self-motivation.
  - 7.4 Discuss bringing about behavior change in patients.
  - 7.5 Discuss phases of a plaque control program.
  - 7.6 Identify and explain the steps for a complete and thorough periodontal diagnosis.
- 8.0 Demonstrate a basic understanding of the etiology and progression of periodontal disease.**
  - 8.1 Explain the progression of periodontal disease from the accumulation of plaque to periodontitis; and be able to distinguish these diseases from each other.
  - 8.2 Identify the factors which contribute to the severity of periodontal disease.
  - 8.3 Identify and explain the make-up of the periodontium of a tooth.
  - 8.4 State the indications/contra-indications for periodontal treatment.
- 9.0 Demonstrate a basic understanding of the nutritional aspects of gingivitis and periodontal disease.**
  - 9.1 Describe the role that nutrition plays in periodontal health and disease to a patient.
  - 9.2 List the effects of food consistency and composition in periodontal disease.
  - 9.3 Describe nutritional factors associated with gingivitis and periodontitis.
  - 9.4 Discuss components of nutritional education for a periodontal patient.
  - 9.5 List major differences between full-liquid, mechanically altered, bland, and regular diets.
  - 9.6 Discuss nutrient deficiencies and oral health issues related to necrotizing periodontal disease.
- 10.0 Demonstrate a basic understanding of nutritional aspects of alterations in the oral cavity.**
  - 10.1 Describe the role that nutrition plays in periodontal health and disease to a patient.
  - 10.2 List the effects of food consistency and composition in periodontal disease.
  - 10.3 Describe nutritional factors associated with gingivitis and periodontitis.
  - 10.4 Discuss the following related to periodontal surgery and necrotizing periodontal disease:
  - 10.5 Discuss components of nutritional education for a periodontal patient.

- 10.6 List major differences between full liquid, mechanically altered, bland, and regular diets.
- 10.7 Discuss nutrient deficiencies and oral health issues related to necrotizing periodontal disease.
- 11.0 Demonstrate a basic understanding of nutritional assessment and education for dental patients.**
  - 11.1 Discuss the importance of a thorough health, social, and dental history in relation to assessment of nutritional status.
  - 11.2 Describe the components needed to assess the nutritional status of a patient.
  - 11.3 Explain the types of diet histories and determine situations in which each may be used effectively.
  - 11.4 Discuss the following related to dietary treatment plans and nutrition education sessions:
  - 11.5 Formulate a dietary treatment plan for a dental problem influenced by nutrition.
  - 11.6 Identify steps and considerations in implementing a dietary treatment plan.
  - 11.7 Assimilate the steps of a nutrition education session.
  - 11.8 Integrate EXPLORE-GUIDE-CHOOSE techniques of motivational interviewing into a clinical setting.
  - 11.9 Practice several communication skills that the dental professional should employ when educating a patient.
- 12.0 Demonstrate a basic understanding of patient education and motivation as it applies to preventive dentistry.**
  - 12.1 Identify the five aspects of preventive dentistry that when used in combination makes a program successful.
  - 12.2 Communicate to the patient the need for prevention.
  - 12.3 Explain motivation and the approaches to it; discuss the importance of understanding the patients' motivations, emotions, and dental attitudes; observe verbal and non-verbal clues.
  - 12.4 Explain the five-step process in learning new skills/habit patterns.
  - 12.5 Identify possible visual aids to be used in patient education.
  - 12.6 Role-play situations to aid students in motivating their patients
- 13.0 Demonstrate a basic understanding of community dentistry.**
  - 13.1 Explain the role of preventive dentistry in the community dentistry program.
  - 13.2 Identify special needs groups who are helped by or depend on community dentistry programs for their oral health care.
  - 13.3 Discuss various preventive dentistry programs for use in a public school or day care facility.
  - 13.4 Tobacco Cessation
- 12.0 Demonstrate a working understanding of Topical Fluoride**
  - 12.1 Basic information about fluoride
  - 12.2 Describe fluoride and its use in dentistry
  - 12.3 Fluoride in food and liquids
  - 12.4 Fluoride in medications and supplements
  - 12.5 Differences between topical and systemic fluoride
  - 12.6 Indications and contraindications for topical fluoride
  - 12.7 Benefits of topical fluoride
  - 12.8 Topical fluoride application

- Professional use
- Home use
- Determining appropriate method
- 12.9 Preparation of teeth
- 12.10 Armamentarium
- 12.11 Fluoride preparations
  - Sodium fluoride
  - Acidulated phosphoric fluoride
  - Stannous fluoride
  - Varnish
- 12.12 Adverse reactions
- 12.13 Patient education
- 12.14 Care of fluoridated products
- 12.15 Post-treatment instructions
- 12.16 Frequency of fluoride treatment