



# ILLINOIS VALLEY COMMUNITY COLLEGE

## COURSE OUTLINE

**DIVISION:** Health Professions

**COURSE:** DLH 1203 Periodontology

Date: Spring 2024

Credit Hours: 2

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

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

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:  **Lecture**                      **2 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)

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

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

This course is intended to provide the dental hygiene student with an understanding of the anatomy and physiology of the tissue of the periodontium in both health and disease. This course will highlight methods and procedures of patient treatment and management of the disease processes related with periodontal disease.

## ACCREDITATION STATEMENTS AND COURSE NOTES:

- Standard 2-Educational Program:

- Curriculum:

2-8 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.

2-8a General education content must include oral and written communications, psychology, and sociology.

2-8b Biomedical science content must include content in anatomy, physiology, chemistry, biochemistry, microbiology, immunology, general pathology and/or pathophysiology, nutrition, and pharmacology.

2-8c 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.

2-8d 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.

2-9 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.

2-10 The number of hours of clinical practice scheduled must ensure that students attain clinical competence and develop appropriate judgment. Clinical practice must be distributed throughout the curriculum.

2-11 The dental hygiene program must have established mechanisms to ensure a sufficient number of patient experiences that afford all students the opportunity to achieve stated competencies.

Patient Care Competencies:

2-12 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.

2-13 Graduates must be competent in providing the dental hygiene process of care which includes:

a) Comprehensive collection of patient data to identify the physical and oral health status.

b) Analysis of assessment findings and use of critical thinking in order to address the patient's dental hygiene treatment needs.

c) Establishment of a dental hygiene care plan that reflects the realistic goals and treatment strategies to facilitate optimal oral health.

d) Provision of patient-centered treatment and evidence-based care in a manner minimizing risk and optimizing oral health.

e) Measurement of the extent to which goals identified in the dental hygiene care plan are achieved.

f) Complete and accurate recording of all documentation relevant to patient care.

2-14 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.

2-15 Graduates must be competent in interpersonal and communication skills to effectively interact with diverse population groups and other members of the health care team.

2-16 Graduates must demonstrate competence in:

- a) Assessing the oral health needs of community-based programs
- b) Planning an oral health program to include health promotion and disease prevention activities
- c) Implementing the planned program, and,
- d) Evaluating the effectiveness of the implemented program.

2-17 Graduates must be competent in providing appropriate life support measures for medical emergencies that may be encountered in dental hygiene practice.

2-18 Where graduates of a CODA accredited dental hygiene program are authorized to perform additional functions required for initial dental hygiene licensure as defined by the program's state specific dental board or regulatory agency, program curriculum must include content at the level, depth, and scope required by the state. Further, curriculum content must include didactic and laboratory/preclinical/clinical objectives for the additional dental hygiene skills and functions. Students must demonstrate laboratory/preclinical/clinical competence in performing these skills.

Ethics and Professionalism:

2-19 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.

2-20 Graduates must be competent in applying legal and regulatory concepts to the provision and/or support of oral health care services.

• Critical Thinking:

2-21 Graduates must be competent in the application of self-assessment skills to prepare them for life-long learning.

2-22 Graduates must be competent in the evaluation of current scientific literature.

2-23 Graduates must be competent in problem solving strategies related to comprehensive patient care and management of patients.

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

- I. Classification of Diseases and Conditions Affecting the Periodontium
  - A. 2018 Periodontal Disease Classification System
  - B. 1999 Periodontal Disease Classification System
- II. **Periodontal Disease Pathogenesis and Genetics**
  - A. Histopathology of Periodontal Disease
  - B. Inflammatory Responses in the Periodontium
  - C. Linking Pathogenesis to Clinical Signs of Disease
  - D. Resolution of Inflammation
  - E. Immune Responses in Periodontal Pathogenesis
  - F. Concept of Host Susceptibility
  - G. Genetics of Periodontal Disease Risk and Treatment
- III. **Biofilm and Periodontal Microbiology and Molecular Biology,**
  - A. The Oral Cavity From a Microbe's Perspective
  - B. Bacteria and Their Biofilm Mode of Living
  - C. Characteristics of Biofilm Bacteria (Life in "Slime City")
  - D. Bacterial Transmission and Translocation
  - E. Nonbacterial Inhabitants of the Oral Cavity
  - F. Microbiologic Specificity of Periodontal Diseases
  - G. The Transition From Health to Disease

- IV. Resolution of Inflammations**
  - A. Inflammation
  - B. Acute Inflammation Is Self-Limited
  - C. Unresolved Chronic Inflammation in Periodontal Diseases
  - D. Therapeutic Actions of Resolution Mediators
- V. Smoking and Periodontal Disease,**
  - A. The Smoking Epidemic
  - B. Effects of Smoking on the Prevalence and Severity of Periodontal Diseases
  - C. Effects of Smoking on the Etiology and Pathogenesis of Periodontal Disease
  - D. Effects of Smoking on the Response to Periodontal Therapy
  - E. Effects of Smoking Cessation on Periodontal Treatment Outcomes
- VI. The Role of Dental Calculus and Other Local Predisposing Factors**
  - A. Calculus
  - B. Other Predisposing Factors
- VII. Influence of Systemic Conditions**
  - A. Endocrine Disorders and Hormonal Changes
  - B. Hematologic Disorders and Immune Deficiencies
  - C. Genetic Disorders
  - D. Stress and Psychosomatic Disorders
  - E. Nutritional Influences
  - F. Medications
  - G. Other Systemic Conditions
- VIII. Impact of Periodontal Infection on Systemic Health**
  - A. Pathobiology of Periodontitis
  - B. Focal Infection Theory Revisited
  - C. Evidence-Based Clinical Practice
  - D. Subgingival Environment as a Reservoir for Bacteria
  - E. Periodontal Disease and Mortality
  - F. Periodontal Disease, Coronary Heart Disease, and Atherosclerosis
  - G. Periodontal Disease and Stroke
  - H. Periodontal Disease and Diabetes Mellitus
  - I. Periodontal Disease and Pregnancy Outcome
  - J. Periodontal Disease and Chronic Obstructive Pulmonary Disease
  - K. Periodontal Disease and Acute Respiratory Infections
  - L. Periodontal Disease and Asthma
  - M. Periodontal Medicine in Clinical Practice
- IX. Defense Mechanisms of the Gingiva**
  - A. Sulcular Fluid
  - B. Leukocytes in the Dentogingival Area
  - C. Saliva
- X. Gingival Inflammation**
  - A. Stage I Gingival Inflammation: The Initial Lesion
  - B. Stage II Gingival Inflammation: The Early Lesion
  - C. Stage III Gingival Inflammation: The Established Lesion
  - D. Stage IV Gingival Inflammation: The Advanced Lesion
- XI. Acute Gingival Infections**
  - A. Necrotizing Ulcerative Gingivitis
  - B. Primary Herpetic Gingivostomatitis
  - C. Pericoronitis

- XII. The Periodontal Pocket and Associated Pathologies**
  - A. Pocket Classification
  - B. Clinical Features
  - C. Pathogenesis
  - D. Histopathology
  - E. Periodontal Disease Activity
  - F. Site Specificity
  - G. Pulp Changes Associated With Periodontal Pockets
  - H. Relationship of Attachment Loss and Bone Loss to Pocket Depth
  - I. Area Between Base of Pocket and Alveolar Bone
  - J. Relationship of Pocket to Bone
  - K. Periodontal Abscess
  - L. Lateral Periodontal Cyst
- XIII. Bone Loss and Patterns of Bone Destruction**
  - A. Bone Destruction Caused by the Extension of Gingival Inflammation
  - B. Bone Destruction Caused by Trauma From Occlusion
  - C. Bone Destruction Caused by Systemic Disorders
  - D. Factors Determining Bone Morphology in Periodontal Disease
  - E. Bone Destruction Patterns in Periodontal Disease
- XIV. Masticatory System Disorders That Influence the Periodontium**
  - A. Temporomandibular Joint
  - B. Muscles and Nerves of the Masticatory System
  - C. Centric Relation
  - D. Dysfunction and Deterioration
  - E. Orofacial Pain
- XV. Chronic Periodontitis,**
  - A. Clinical Features
  - B. Risk Factors for Disease
- XVI. Aggressive Periodontitis (Periodontitis Grade C)**
  - A. Classification and Clinical Characteristics
  - B. Epidemiology
  - C. Pathobiology and Risk Factors
  - D. Therapeutic Considerations in Aggressive Periodontitis Patients
- XVII. Necrotizing Ulcerative Periodontitis**
  - A. Clinical Features
  - B. Microscopic Findings
  - C. Patients With HIV/AIDS
  - D. Etiology of Necrotizing Ulcerative Periodontitis
  - E. Malnutrition
- XVIII. Periodontal Examination and Diagnosis**
  - A. Overall Appraisal of the Patient
  - B. Health History
  - C. Dental History
  - D. Photographic Documentation
  - E. Clinical Examination
  - F. Tactile Periodontal Examination
  - G. Periodontal Charting
  - H. Examination of the Teeth and Implants
  - I. Radiographic Examination
  - J. Laboratory Aids to Clinical Diagnosis

- K. Periodontal Diagnosis
- L. Assessment of Biofilm Control and Patient Education
- XIX. Radiographic Aids in the Diagnosis of Periodontal Disease**
  - A. Normal Interdental Bone
  - B. Radiographic Techniques
  - C. Bone Destruction in Periodontal Disease
  - D. Radiographic Appearance of Periodontal Disease
  - E. Digital Intraoral Radiography
  - F. Advanced Imaging Modalities
- XX. Clinical Risk Assessments**
  - A. Risk Factors for Periodontal Disease
  - B. Risk Determinants/Background Characteristics for Periodontal Disease
  - C. Risk Indicators for Periodontal Disease
  - D. Risk Markers/Predictors for Periodontal Diseases
  - E. Clinical Risk Assessment for Periodontal Disease
- XXI. Determination of Prognosis**
  - A. Definitions
  - B. Types of Prognosis
  - C. Factors in Determination of Prognosis
  - D. Prognosis of Specific Periodontal Diseases
  - E. Determination and Reassessment of Prognosis
- XXII. Treatment Planning and the Rationale for Periodontal Treatment**
  - A. Overall Treatment Plan
  - B. Sequence of Therapy
  - C. Explaining the Treatment Plan to the Patient
- XXIII. Periodontal Treatment of Medically Compromised Patients**
  - A. Cardiovascular Diseases
  - B. Endocrine Disorders
  - C. Hemorrhagic Disorders
  - D. Renal Diseases
  - E. Liver Diseases
  - F. Pulmonary Diseases
  - G. Medications and Cancer Therapies
  - H. Prosthetic Joint Replacement
  - I. Pregnancy
  - J. Infectious Diseases
- XXIV. Periodontal Therapy in the Female Patient**
  - A. Puberty
  - B. Menses
  - C. Pregnancy
  - D. Oral Contraceptives
  - E. Menopause
- XXV. Periodontal Treatment for Older Adults**
  - A. The Aging Periodontium
  - B. Demographics
  - C. Dental and Medical Assessments
  - D. Periodontal Diseases in Older Adults
  - E. Periodontal Treatment Planning

- XXVI. Treatment of Aggressive and Atypical Forms of Periodontitis,**
  - A. Aggressive Periodontitis
  - B. Periodontitis Refractory to Treatment
  - C. Necrotizing Ulcerative Periodontitis
- XXVII. Treatment of Acute Gingival Disease**
  - A. Necrotizing Ulcerative Gingivitis
  - B. Primary Herpetic Gingivostomatitis
  - C. Pericoronitis
- XXVIII. Treatment of Periodontal Abscess**
  - A. Classification of Abscesses
  - B. Specific Treatment Approaches
  - C. Section 4 Nonsurgical Treatment
- XXIX. Phase I Periodontal Therapy**
  - A. Rationale
  - B. Treatment Sessions
  - C. Sequence of Procedures
  - D. Results
  - E. Healing
  - F. Decision to Refer for Specialist Treatment
- XXX. Scaling and Root Planing**
  - A. Classification of Periodontal Instruments
  - B. General Principles of Instrumentation
  - C. Principles of Scaling and Root Planing
  - D. Instrument Sharpening
- XXXI. Systemic and Local Anti-Infective Therapy for Periodontal Diseases,**
  - A. Systemic Antibiotics—Background and Definitions
  - B. Systemic Administration of Antibiotics
  - C. Serial and Combination Antibiotic Therapy
  - D. Locally Delivered Antibiotics: Background and Objectives
  - E. Local Administration of Antibiotics
- XXXII. Phase II Periodontal Therapy**
  - A. Objectives of the Surgical Phase
  - B. Pocket Elimination Versus Pocket Maintenance
  - C. Reevaluation After Phase I Therapy
  - D. Critical Zones in Pocket Surgery
  - E. Indications for Periodontal Surgery
  - F. Methods of Pocket Therapy
- XXXIII. General Principles and Types of Periodontal Surgery**
  - A. Principles of Periodontal Surgery
  - B. Hospital Periodontal Surgery
  - C. Types of Periodontal Surgeries
  - D. Surgical Instruments
  - E. Gingival Surgery
  - F. Flap Surgery
- XXXIV. Supportive Periodontal Treatment**
  - A. Rationale for Supportive Periodontal Treatment
  - B. Maintenance Program
  - C. Classification of Posttreatment Patients and Risk Assessment
  - D. Referral of Patients to the Periodontist
  - E. Tests for Disease Activity

### **XXXV. Results of Periodontal Treatment**

- A. Prevention and Treatment of Gingivitis
- B. Prevention and Treatment of Loss of Attachment
- C. Tooth Mortality

### **INSTRUCTIONAL METHODS:**

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

### **EVALUATION OF STUDENT ACHIEVEMENT:**

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**

NEWMAN AND CARRANZA'S CLINICAL PERIODONTOLOGY FOR THE DENTAL HYGIENIST (2021)

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

#### **Resources**

Evolve resources for Newman and Carranza's Clinical Periodontology for the Dental Hygienist

### **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**

- 1.Outcome** Identify the current and historical classification of diseases and conditions affecting the periodontium.
  - 1.1. Describe the 2018 Periodontal Disease Classification System.
  - 1.2. Compare the current classification system with the 1999 Periodontal Disease Classification System.
- 2.Outcome** Explain the pathogenesis and genetics of periodontal disease.
  - 2.1. Identify the histopathology of periodontal disease.
  - 2.2. Describe the inflammatory and immune responses in the periodontium.
  - 2.3. Explain the role of genetics and host susceptibility in disease risk.
- 3.Outcome** Demonstrate a basic understanding of biofilm and periodontal microbiology and molecular biology.
  - 3.1. Describe characteristics of biofilm bacteria.
  - 3.2. Explain bacterial transmission and translocation.
  - 3.3. Describe nonbacterial inhabitants of the oral cavity.
- 4.Outcome** Demonstrate a basic understanding of the resolution of inflammation.
  - 4.1. Compare acute and chronic inflammation in periodontal disease.
  - 4.2. Describe therapeutic actions of resolution mediators.
- 5.Outcome** Describe the effects of smoking on periodontal disease.
- 6.Outcome** Describe the role of dental calculus and other local predisposing factors on periodontal disease.
- 7.Outcome** Demonstrate a basic understanding of the influence of systemic conditions on periodontal disease.
  - 7.1. Describe the effects of endocrine disorders and hormonal changes on the periodontium.
  - 7.2. Describe the effects of hematologic disorders and immune deficiencies on the periodontium.
  - 7.3. Describe the effects of genetic disorders, stress, and psychosomatic disorders on the periodontium.
  - 7.4. Describe the effects of nutritional deficiencies and medications on the periodontium.
- 8.Outcome** Demonstrate a basic understanding of periodontal infection and its impact on systemic health.
  - 8.1. Describe the pathobiology of periodontitis.
  - 8.2. Describe periodontal disease and its relationship to coronary heart disease, stroke, and atherosclerosis.
  - 8.3. Describe periodontal disease and its relationship to diabetes mellitus.
  - 8.4. Describe periodontal disease and its relationship to COPD, asthma, and acute respiratory infections.
- 9.Outcome** Describe the defense mechanisms of the gingiva.
- 10.Outcome** Describe the stages of gingival inflammation.
- 11.Outcome** Demonstrate a comprehensive understanding of acute gingival infections.
- 12.Outcome** Demonstrate a comprehensive understanding of the periodontal pocket and associated pathologies.
  - 12.1 Describe pocket classifications and clinical features.
  - 12.2 Explain periodontal disease activity, site specificity, and pulp changes.

- 12.3 Describe the relationship of attachment loss and bone loss to pocket depth.
- 13.Outcome** Demonstrate a basic understanding of bone loss and patterns of bone destruction.
- 13.1 Compare bone destruction from gingival inflammation, trauma, and systemic disorders.
- 13.2 Describe factors determining bone morphology in a periodontal disease.
- 13.3 Describe bone destruction patterns in periodontal disease.
- 14.Outcome** Identify and explain masticatory system disorders that influence the periodontium.
- 15.Outcome** Identify and explain the clinical features and risk factors of chronic periodontitis.
- 16.Outcome** Demonstrate a comprehensive understanding of aggressive periodontitis.
- 16.1 Explain the clinical characteristics and classifications of aggressive periodontitis.
- 16.2 Describe the epidemiology, pathobiology, and risk factors associated with aggressive periodontitis.
- 16.3 Discuss the therapeutic considerations in aggressive periodontitis patients.
- 17.Outcome** Identify the clinical features of necrotizing ulcerative periodontitis.
- 18.Outcome** Demonstrate a comprehensive understanding of the periodontal examination and diagnosis.
- 18.1 Describe the overall appraisal of the patient.
- 18.2 Identify examination techniques and documentation protocols.
- 18.3 Discuss clinical diagnoses.
- 19.Outcome** Demonstrate a basic understanding of radiographic aids in the diagnosis of periodontal disease.
- 20.Outcome** Discuss clinical risk assessments for periodontal disease.
- 21.Outcome** Demonstrate a basic understanding of the determination of periodontal disease prognosis.
- 22.Outcome** Describe the treatment planning process and rationale for periodontal treatment.
- 23.Outcome** Discuss periodontal treatment options of medically compromised patients.
- 24.Outcome** Describe treatment options for aggressive and atypical forms of periodontitis.
- 25.Outcome** Demonstrate a basic understanding of periodontal therapy in the female patient.
- 25.1 Compare periodontal therapy in women during puberty, menses, pregnancy, and menopause.
- 25.2 Discuss oral contraceptives and its effect of periodontal therapy
- 26.Outcome** Demonstrate a basic understanding of periodontal therapy and in older adults
- 26.1 Discuss the aging periodontium and its effect of periodontal treatment
- 26.2 Describe the dental and medical assessments for older adults
- 26.3 Describe periodontal treatment and treatment planning for older adults
- 27.Outcome** Identify and describe treatments for acute gingival disease
- 28.Outcome** Identify and describe treatments for the periodontal abscess
- 29.Outcome** Demonstrate a comprehensive understanding of Phase I periodontal therapy

- 29.1. Describe the rationale, treatment sessions, sequence of procedures, and results of phase I periodontal therapy
- 30.Outcome** Demonstrate a comprehensive understanding of scaling and root planning
  - 30.1. Discuss the classification of periodontal instruments
  - 30.2. Describe general principles of instrumentation
  - 30.3. Describe instrument sharpening
- 31.Outcome** Describe systemic and local anti-infective therapy for periodontal disease
- 32.Outcome** Demonstrate a comprehensive understanding of phase II periodontal therapy
  - 32.1. Describe the objectives of the surgical phase
  - 32.2. Compare pocket elimination versus pocket maintenance
  - 32.3. Discuss indications for periodontal surgery
- 33.Outcome** Describe the general principles and types of periodontal surgery
- 34.Outcome** Discuss supportive periodontal treatment options
- 35.Outcome** Describe results of periodontal treatment
  - 35.1. Discuss prevention and treatment of gingivitis
  - 35.2. Discuss prevention and treatment of loss of attachment
  - 35.3. Discuss tooth mortality