

# DENTAL HYGIENE

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## DHYG 2210. Preclinical Dental Hygiene Seminar

### 3 Credits (3)

This foundational course provides dental hygiene students with the introductory knowledge, skills, and attitudes essential for success in the clinical setting emphasizing scientific principles, current theory, prevention of disease transmission, ethical and professional patient treatment and clinical preparation for comprehensive patient care.

#### Learning Outcomes

1. Describe infection control protocols for safe dental hygiene practice.
2. Identify equipment and materials for sterilization and disinfection.
3. Explain ergonomics and positioning strategies for safe patient and operator interaction.
4. Discuss time and motion management principles for clinical efficiency.
5. Describe protocols for medical emergency prevention and management.
6. Demonstrate the ability to obtain and record a comprehensive health history.
7. Identify key anatomical landmarks for patient assessment and charting.
8. Describe the properties and applications of preventive pharmacological agents.
9. List diagnostic and screening tools used in clinical examinations.
10. Recognize the importance of consistent patient assessment based on professional standards.

## DHYG 2212. Preclinical Dental Hygiene

### 3 Credits (3P)

The Preclinical Dental Hygiene course introduces students to the fundamental principles of patient care, infection control, and clinical techniques. Students will develop foundational skills in instrumentation, patient assessment, and treatment planning, preparing them for direct patient care in future clinical courses. Specific clinical requirements are set for this program and may not be transferrable to other programs.

#### Learning Outcomes

1. Demonstrate universal precautions in clinical practice.
2. Apply methods of sterilization and disinfection.
3. Show proper patient/operator positioning techniques.
4. Demonstrate basic strategies for preventing medical emergencies.
5. Perform comprehensive patient assessments.
6. Apply fundamental principles of treatment planning.
7. Demonstrate proper instrumentation techniques for clinical care.
8. Practice ethical and professional behavior in patient interactions.

## DHYG 2213. Oral Histology and Embryology

### 2 Credits (2)

This course provides a comprehensive introduction to the microscopic structures of the oral tissues and their embryological formation.

#### Learning Outcomes

1. Define and explain the concepts of dental histology and embryology.
2. Describe the embryological development, morphology, and histology of the human dentition and its associated structures.

## DHYG 2214. Head and Neck Anatomy

### 3 Credits (3)

This course provides a comprehensive study of the anatomy and physiology of the head and neck regions with a specific emphasis on oral structures and their functions.

#### Learning Outcomes

1. Discuss the clinical applications of the study of head and neck anatomy by dental professionals.
2. Identify the anatomical structures of the head and neck.
3. Discuss normal anatomic variation and how it applies to different structures of the head and neck.
4. Identify deviations from normal, and how it applies to different structures of the head and neck.
5. Integrate the knowledge of head and neck anatomy into clinical practice of patient examination, dental radiology, and the future use of local anesthetics.

## DHYG 2215. Tooth Anatomy and Morphology

### 2 Credits (2+1P)

This course provides a comprehensive study of human dentition, including their development and relationships within the oral cavity. Key areas of focus include universal charting, numbering systems, cavity classification, and laboratory activities enhance observational and clinical skills. May be repeated up to 2 credits.

#### Learning Outcomes

1. Describe the anatomy, physiology and stages of the human dentitions.
2. Explain the concept of occlusion and malocclusion.
3. Describe dental numbering systems and tooth identification.
4. Explain the eruption process and the eruption schedule for primary and permanent dentitions.

## DHYG 2216. Dental Radiology

### 3 Credits (3)

This course focuses on the principles and techniques of dental radiography. Students will study radiation physics, hygiene, and safety protocols. Emphasis is placed on the fundamentals of intraoral and extraoral radiographic techniques, including exposure, quality assurance, and interpretation of radiographs. The course also covers patient selection criteria and explores other ancillary radiographic techniques.

#### Learning Outcomes

1. Explain the principles of radiation physics in the production of x-rays.
2. Discuss the effects of ionizing radiation on living tissues and implement appropriate safety measures.
3. Recognize appropriate receptors and exposure factors.
4. Differentiate intraoral and extraoral radiographic techniques including landmarks and interpretation.
5. Explain infection control protocols during all radiographic procedures.
6. Recognize legal and ethical considerations related to dental radiography.
7. Develop communication strategies as related to dental radiology.

## DHYG 2216L. Dental Radiology Lab

### 1 Credit (1P)

The laboratory emphasizes first-hand observations and hands-on performance of skill competencies that support the concepts taught in the theory course. May be repeated up to 1 credit.

#### Learning Outcomes

1. Produce high-quality dental radiographs in a safe, legal and ethical manner.

- Effectively communicate with and manage patients during radiographic procedures.

### **DHYG 2220. Clinical Dental Hygiene Seminar I**

#### **3 Credits (3)**

A continuation of clinical skills, patient assessment, treatment, scheduling, preventive techniques and application of dental hygiene procedures at the intermediate level. Work-based instruction that helps students synthesize new knowledge, apply previous knowledge or gain experience managing the workflow. Practical experience is simultaneously related to theory. Direct supervision is provided by the clinical faculty.

#### **Learning Outcomes**

- Explain fundamental principles of infection control and patient safety.
- Describe methods for assessing oral health conditions.
- Discuss strategies for ensuring efficiency and safety in clinical practice.
- Analyze techniques used in preventive dental care.
- Identify factors that influence patient health and treatment considerations.
- Interpret patient assessment data for informed decision-making.
- Discuss protocols for referrals and emergency management.
- Evaluate approaches to patient education and communication.
- Examine ethical and professional responsibilities in dental care.
- Integrate evidence-based concepts into dental hygiene practice.

### **DHYG 2222. Clinical Dental Hygiene I**

#### **4 Credits (4P)**

Building upon the foundational skills acquired in Preclinical Dental Hygiene, this course transitions students into the clinical setting where they begin providing care to patients. Emphasis is placed on applying infection control protocols, conducting comprehensive assessments, and implementing basic treatment plans with close faculty supervision. Specific clinical requirements are set for this program and may not be transferrable to other programs.

#### **Learning Outcomes**

- Apply universal precautions in clinical care.
- Perform effective sterilization and disinfection procedures.
- Show proper patient/operator positioning during treatment.
- Demonstrate emergency prevention strategies in patient care.
- Conduct thorough patient assessments.
- Implement treatment plans based on patient assessment.
- Apply instrumentation techniques to remove deposits effectively.
- Demonstrate ethical reasoning in clinical decision-making.

### **DHYG 2223. General and Oral Pathology**

#### **3 Credits (3)**

Introduction to general pathology with focused study of diseases and disorders of the oral cavity and their interrelationship with body systems; developmental anomalies of the teeth and jaws; manifestations of disease in the oral cavity, head and neck.

#### **Learning Outcomes**

- Describe pathological processes and their effects on the immune system and body organ systems.
- Differentiate oral conditions based on clinical and radiographic characteristics for accurate diagnosis.
- Assess oral lesions to determine their significance and the need for referral.

- Communicate effectively about oral disease manifestations with healthcare professionals and patients.
- Integrate oral pathology knowledge into treatment planning, patient education, and evidence-based care.

### **DHYG 2224. Periodontology**

#### **3 Credits (3)**

Study of normal and diseased periodontium to include the structural, functional and environmental factors. Emphasis on etiology, pathology, evaluation of disease, treatment modalities, and therapeutic and preventative periodontics relative to the hygienist's role as a co-therapist in a contemporary practice setting.

#### **Learning Outcomes**

- Describe the characteristics of healthy and diseased periodontium to support accurate diagnosis.
- Classify periodontal diseases to guide treatment planning.
- Explain the causes and progression of periodontal diseases and their impact on the periodontium.
- Identify key considerations for periodontal surgical and nonsurgical treatments.
- Discuss the influence of systemic health factors on periodontal disease progression and management.

### **DHYG 2225. Dental Materials**

#### **2 Credits (2)**

Covers the composition, properties, classifications, uses, and manipulation of materials commonly used in dentistry. Topics also include legal, ethical, and safety issues related to the use of dental materials. May be repeated up to 2 credits.

#### **Learning Outcomes**

- Explain the properties, composition, handling, storage, dispensing and disposal of dental materials used chairside and in the laboratory.
- Describe the legal and ethical considerations for using dental materials in a safe and responsible manner.
- Describe the role of the dental auxiliary in the selection, preparation, and placement of dental materials.

### **DHYG 2225L. Dental Materials Laboratory**

#### **1 Credit (1P)**

The laboratory emphasizes first-hand observations and hands-on performance of skill competencies that support the concepts taught in the theory course. May be repeated up to 1 credit.

#### **Learning Outcomes**

- Demonstrate the handling, storage, dispensing and disposal of dental materials used chairside and in the laboratory.
- Demonstrate the role of the dental auxiliary in the legal, ethical, and safe use of dental materials.

### **DHYG 2226. Medical and Dental Emergencies**

#### **2 Credits (2)**

This course provides an overview of medical and dental emergencies encountered most frequently in the dental setting. The course also focuses on the recognition, prevention, preparation and management of these emergencies. It also provides the student with knowledge and techniques on how to address those emergencies should they occur.

#### **Learning Outcomes**

- Describe the components and purpose of an emergency kit in managing medical emergencies in a dental setting.
- Apply treatment protocols for managing medical emergencies during dental care.

3. Recognize abnormal vital signs and their implications for emergency intervention.
4. Explain the key steps in preparing a dental office for effective emergency management.
5. Demonstrate techniques for managing airway obstructions and foreign body aspirations in emergencies.
10. Explain the importance of emergency preparedness in the dental office, including recognizing symptoms of undiagnosed medical conditions, responding to adverse drug reactions, and implementing emergency protocols to ensure patient safety.

### **DHYG 2227. Clinical Dental Hygiene II**

#### **2 Credits (2)**

Clinic II advances students' clinical competencies by refining their instrumentation techniques, treatment planning, and patient management skills. With increased independence, students will provide care for patients with varying oral health needs while learning to evaluate treatment effectiveness and make appropriate modifications. Specific clinical requirements are set for this program and may not be transferrable to other programs.

#### **Learning Outcomes**

1. Maintain universal precautions in all patient interactions.
2. Demonstrate adherence to sterilization and disinfection standards.
3. Apply patient/operator positioning to optimize clinical efficiency.
4. Assess patient risk factors to prevent medical emergencies.
5. Perform individualized treatment procedures.
6. Demonstrate precision in instrumentation techniques.
7. Evaluate patient responses and adjust treatment accordingly.
8. Apply ethical and professional standards to clinical practice.

### **DHYG 2228. Pain and Anxiety Management**

#### **2 Credits (2)**

Study of the application of various physical, chemical, and psychological modalities to the prevention and treatment of preoperative and postoperative patient anxiety and pain. Emphasis on administration of local anesthesia and nitrous oxide.

#### **Learning Outcomes**

1. Explain the anatomy and physiology of nerve conduction, including pain transmission mechanisms and how they are influenced by local anesthetics.
2. Discuss the pharmacological properties, actions, contraindications, and potential adverse reactions of local anesthetic agents, vasoconstrictors, and nitrous oxide.
3. Evaluate the effects of local anesthetics on the central nervous system (CNS) and cardiovascular system (CVS), including recognition and management of adverse reactions.
4. Describe the biotransformation processes of esters and amides, the concept of drug half-life, and the clinical relevance of pKa and pH in anesthesia.
5. Identify clinical signs and symptoms of adverse reactions to local anesthetics and vasoconstrictors, and describe appropriate management protocols for these reactions.
6. List and explain the maximum recommended doses for local anesthetics and vasoconstrictors, and discuss dose modifications for children, adults, and patients with compromised health.
7. Describe the steps to recognize and manage medical emergencies related to anesthesia administration, including syncope, allergic reactions, and cardiovascular complications.
8. Evaluate patient medical and dental histories to identify risk factors that may influence the selection of anesthetic agents and necessitate medical consultation.
9. Discuss proper protocols for handling sharps, preventing cross-contamination, and managing equipment used in local anesthesia. 1

### **DHYG 2228L. Pain and Anxiety Management Clinical**

#### **1 Credit (1P)**

Clinical application of concepts learned in Pain and Anxiety Management. Emphasis on the administration and techniques of local anesthesia and monitoring nitrous oxide.

**Prerequisite:** C or better in DHYG 2228.

#### **Learning Outcomes**

1. Demonstrate the proper technique for administering local anesthetic injections, including infiltrations and nerve blocks, to ensure effective pain control and patient comfort.
2. Apply knowledge of intraoral landmarks to accurately and safely perform various local anesthetic injections, such as the ASA, PSA, IA, and mental nerve blocks.
3. Evaluate a patient's medical and dental history to identify contraindications and determine the appropriate anesthetic agents, vasoconstrictors, and techniques for treatment.
4. Administer nitrous oxide-oxygen sedation safely and effectively, monitoring the patient's physiological and psychological responses throughout the procedure.
5. Identify and manage adverse reactions or medical emergencies associated with the administration of local anesthetics, vasoconstrictors, or nitrous oxide, including syncope, allergic reactions, or toxicity.
6. Calculate and adjust dosages of local anesthetics, vasoconstrictors, and nitrous oxide based on patient factors such as age, weight, medical history, and health status.
7. Ensure proper handling and disposal of sharps and other equipment to maintain infection control and safety during anesthetic administration.
8. Educate patients about the procedure, expected outcomes, dosage safety, and post-operative considerations associated with local anesthesia and nitrous oxide sedation.

### **DHYG 2230. Clinical Dental Hygiene Seminar III**

#### **2 Credits (2)**

Continuing development of a theoretical framework of dental hygiene treatment with advancement of dental hygiene proficiency in all areas of dental hygiene treatment. Presentation and discussion of case histories from patients and preventive measures employed against disease concurrent with clinical practice with emphasis on special needs patients. May be repeated up to 2 credits.

#### **Learning Outcomes**

1. Discuss advanced concepts in periodontal therapy and patient care.
2. Apply pharmacological principles to dental hygiene treatment.
3. Evaluate patient outcomes to guide treatment decisions.
4. Explore interdisciplinary approaches to comprehensive patient care.
5. Develop strategies for managing medical emergencies in a clinical setting.
6. Assess risk factors affecting oral and systemic health.
7. Discuss approaches to patient education and disease prevention.
8. Analyze patient documentation and follow-up care planning.
9. Examine strategies for long-term patient management and referrals. 1

- Recognize the importance of self-assessment and ongoing professional development.

### **DHYG 2232. Clinical Dental Hygiene III**

#### **5 Credits (5P)**

Clinic III, students manage more complex cases, requiring advanced critical thinking and problem-solving skills. They will integrate diagnostic tools, adapt treatment strategies, and demonstrate greater autonomy in decision-making. Emphasis is placed on professional judgment, ethical considerations, and comprehensive patient care. Specific clinical requirements are set for this program and may not be transferrable to other programs.

#### **Learning Outcomes**

- Implement universal precautions.
- Evaluate sterilization and disinfection protocols for effectiveness.
- Demonstrate advanced patient/operator positioning techniques.
- Develop strategies for managing medical emergencies.
- Integrate diagnostic and assessment techniques into treatment planning.
- Demonstrate critical thinking in managing complex patient cases.
- Assess the effectiveness of treatment outcomes.
- Apply ethical reasoning and professionalism in clinical decision-making.

### **DHYG 2233. Pharmacology**

#### **3 Credits (3)**

Study of the pharmacologic aspects of drugs and drug groups with which the dentist and dental hygienist are directly and indirectly concerned. Emphasis is placed on nomenclature, origin, physical and chemical properties, preparation, modes of administration and effects of drugs upon the body systems.

#### **Learning Outcomes**

- Identify the effects of commonly used drugs on dental treatment.
- Describe strategies for managing drug interactions, medical emergencies, and oral manifestations related to drug use in dental practice.
- Apply pharmacological principles to the management of patient care in a clinical dental setting.
- Explain approaches to ensuring safe dental care for patients with complex medical histories.
- Incorporate pharmacological knowledge and ethical considerations into dental care practices.

### **DHYG 2234. Research Methodology**

#### **2 Credits (2)**

This course provides an introduction to the principles and application of research methods in social, behavioral and medical research.

#### **Learning Outcomes**

- Explain how oral health research and the process of scientific inquiry knowledge development and daily practice.
- Explain how an evidence-based decision-making approach enhances critical thinking and professional decision-making regarding patient care.
- Describe the scientific method and research process.
- Use the Internet and electronic resources in research and understand how they relate to dental hygiene education, practice and research.
- Conduct an effective literature search using electronic databases (such as PubMed, MEDLINE, and CINAHL), professional journals,

government documents, product literature and other print publications, video and other forms of multimedia.

- Develop a PICO (or equivalent) research question to address an identified practice problem.
- Discuss different research designs and when each is appropriate to use.
- Explain the elements necessary to obtain valid and reliable results for observational, exploratory and experimental research.
- Evaluate oral health research articles applying concepts of research design and methodology. 1
- Interpret oral health data by proper application of statistical principles and tests. 1
- Critically analyze different print and electronic information sources and apply to the practice of dental hygiene. 1
- Gain an appreciation for the role of research in evidence-based dental hygiene practice.

### **DHYG 2240. Clinical Dental Hygiene Seminar IV**

#### **3 Credits (3)**

A continuation of information to prepare the student for advanced clinical practice. Provides an in-depth study of dental hygiene care for diverse patient populations and provides a forum for evaluation of the service project from Dental Public Health, and synthesis of all dental hygiene knowledge, skills and attitudes into a case presentation.

#### **Learning Outcomes**

- Explore advanced concepts in dental hygiene care and patient management.
- Discuss strategies for handling medical emergencies in a clinical setting.
- Analyze patient assessment data to support interdisciplinary treatment planning.
- Evaluate the effectiveness of dental hygiene interventions for long-term patient outcomes.
- Examine professional responsibilities in mentoring and education within the field.
- Develop strategies for addressing barriers to oral health care in diverse populations.
- Explore approaches to collaborative, patient-centered care in dental hygiene practice.
- Assess clinical practices using evidence-based research to support continuous improvement.
- Discuss the legal, ethical, and professional considerations in patient documentation. 1
- Recognize the role of dental hygienists in leadership, research, and advocacy for oral health.

### **DHYG 2242. Clinical Dental Hygiene IV**

#### **5 Credits (16P)**

As the final clinical course, Clinic 4 prepares students for professional practice by refining their ability to manage diverse and complex patient cases with confidence and competence. Students will demonstrate mastery of clinical skills, collaborate with healthcare professionals, and develop strategies for lifelong learning and ethical practice in dental hygiene. Specific clinical requirements are set for this program and may not be transferrable to other programs.

#### **Learning Outcomes**

- Implement universal precautions across all clinical settings.
- Develop an evidence-based approach to sterilization and disinfection.
- Demonstrate mastery of patient/operator positioning.

4. Create a risk management plan for emergency prevention and response.
5. Synthesize patient data to develop comprehensive treatment plans.
6. Lead interprofessional collaboration to enhance patient care.
7. Design a system for evaluating treatment effectiveness.
8. Advocate for ethical and professional excellence in clinical practice.

#### **DHYG 2243. Principles of Practice**

##### **2 Credits (2)**

Examination of the dental hygienist's role in both traditional and non-traditional employment settings. Career planning, resume preparation and interviewing are practices. An understanding of the law, professional ethics of dental hygiene and the need for lifelong learning are emphasized. Future roles of the dental hygienist and emerging issues in dental hygiene will be explored.

##### **Learning Outcomes**

1. Analyze the core values found in the Codes of Ethics of professional dental organizations and their application to dental hygiene practice.
2. Compare the ethical theories.
3. Demonstrate an ethical decision-making framework by applying it to case-based scenarios and defending the chosen course of action.
4. Evaluate the differences between different legal frameworks for the licensing and practice of dental hygienists.
5. Create a protocol for addressing cultural competence and sensitivity in patient care delivery, including strategies to overcome health literacy challenges.

#### **DHYG 2244. Dental Public Health Education**

##### **3 Credits (3)**

Study of principles and concepts of community public health and dental health education. Emphasis on dental epidemiology and statistical methods, community assessment, educational planning, implementation, and evaluation, scientific review of literature, and classroom presentation.

##### **Learning Outcomes**

1. Participate in community programs to prevent oral diseases and promote health.
2. Deliver evidence-based oral health care and education to diverse populations.
3. Develop strategies for implementing and evaluating oral health programs.
4. Advocate for oral health promotion through collaboration with various stakeholders.
5. Apply scientific research to evaluate dental products, techniques, and policies for informed decision-making.

#### **DHYG 2996. Special Topics in Dental Hygiene**

##### **1 Credit (4P)**

Varies. May be repeated up to 2 credits.

##### **Learning Outcomes**

1. Varies.