

El Paso Community College
Syllabus
Part II
Official Course Description

SUBJECT AREA	Dental Hygiene								
COURSE RUBRIC AND NUMBER	DHYG 1311								
COURSE TITLE	Periodontology								
COURSE CREDIT HOURS	<table border="0" style="margin: auto;"> <tr> <td style="text-align: center;">3</td> <td style="text-align: center;">2</td> <td style="text-align: center;">:</td> <td style="text-align: center;">2</td> </tr> <tr> <td style="text-align: center;">Credits</td> <td style="text-align: center;">Lec</td> <td></td> <td style="text-align: center;">Lab</td> </tr> </table>	3	2	:	2	Credits	Lec		Lab
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Credits	Lec		Lab						

I. Catalog Description

Normal and diseased periodontium including the structural, functional, and environmental factors. Emphasis on etiology, pathology, treatment modalities, and therapeutic and preventive periodontics. A grade of "C" or better is required in this course to take the next course. **Prerequisites: DHYG 1239 and DHYG 1301 and DHYG 1304 and DHYG 1431. Corequisites: DHYG 1219 and DHYG 1235 and DHYG 1261 and DHYG 2201. (2:2). Lab fee.**

II. Course Objectives

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

Part 1: The Periodontium in Health

A. Unit I. The Periodontium Tissues

1. Identify the tissues of the periodontium.
2. Describe the development, anatomy, histology and physiology of the gingiva, periodontal ligament, cementum, and alveolar bone.
3. Identify and describe the anatomical areas and boundaries of the gingiva using illustrations.
4. Describe the characteristics of the gingiva, periodontal ligament, cementum, and alveolar bone in health
5. Describe the nerve and blood supply of the periodontium.
6. Explain the role of the lymphatic system of the periodontium.

B. Unit II. Microscopic Anatomy of the Healthy Periodontium Tissues

1. Review the roles and functions of tissue, cells, and extracellular matrix.
2. Describe and discuss the microscopic anatomy of the epithelial tissue.
3. Describe and discuss the microscopic anatomy of the connective tissue.
4. Describe the histology of the epithelial-connective tissue interface.
5. Discuss the role of cell junctions.
6. Describe the microscopic anatomy of the gingival epithelium tissue.
7. Identify the three microscopic anatomical areas of the gingival epithelium using illustrations.
8. Explain why the teeth need a junctional epithelium and how the soft tissue and hard tissue attach.
9. Describe the microscopic anatomy of the gingival connective tissue.
10. Discuss and describe the supragingival fiber groups of the gingival connective tissue.

11. Identify and label the five supragingival groups uniting the free gingiva to the cementum and alveolar bone using the illustration.
12. Discuss and describe the location of the periodontal ligament fiber groups of the gingival connective tissue.
13. Define the terms cementum and Sharpey fibers and describe their function in the periodontium.
14. Explain the three arrangements of cementum to enamel (OMG).
15. Recognize the importance of the conservation of cementum.
16. Describe the microscopic anatomy of alveolar bone and function in the periodontium.

Part 2: Diseases Affecting the Periodontium

C. Unit III. Overview of Diseases of the Periodontium

1. Define and discuss pathogenesis of periodontal disease.
2. Identify the three basic states of the periodontium
3. Define periodontal disease and the two basic categories.
4. Describe the clinical and microscopic characteristics of the normal periodontium in health.
5. Describe the clinical and microscopic characteristics of gingivitis.
6. Explain the concept that tissue damage in gingivitis is reversible.
7. Describe the clinical and microscopic characteristics of periodontitis.
8. Explain the concept that tissue damage in periodontitis is irreversible.
9. Describe and discuss the pathogenesis of bone destruction, patterns of bone loss, and osseous defects seen in the alveolar bone.
10. Describe and discuss the pathogenesis of gingival pockets.
11. Describe and discuss the pathogenesis of attachment loss in periodontal pockets and the two types of periodontal pockets.
12. Discuss the theories of disease progression in periodontal disease.
13. Discuss the epidemiology of the diseases of the periodontium.

D. Unit IV. Classification of Periodontal and Peri-Implant Diseases and Conditions

1. Explain the importance of a classification system for periodontal disease.
2. Describe the *2017 AAP/EFPP Classification of Periodontal and Peri-Implant Diseases and Conditions*.
3. Identify the three major categories of periodontal diseases and conditions.
4. Identify the subcategories of *Periodontal Health, Gingival Disease, and Conditions*.
5. Identify the subcategories of *Periodontitis*.
6. Identify the subcategories of *Other Conditions Affecting the Periodontium*.
7. Identify the four subcategories of the *Peri-Implant Diseases and Conditions*
8. Discuss some differences between the 2017 and the 1999 Classification Systems.
9. Discuss and identify the AAP/EPCC classification system

E. Unit V. Clinical Features of the Healthy Gingiva and Gingival Inflammation

1. Describe the appearance of healthy gingiva and variations of health.
2. Describe the clinical signs of gingival inflammation.
3. Discuss and compare the clinical features of healthy and inflamed gingival tissue.
4. Explain the difference in color between acute and chronic inflammation.
5. Differentiate between bulbous, blunted, and cratered papilla.
6. Write a gingival statement describing gingival inflammation using descriptive terminology identifying the color, contour, consistency, texture, and position of the margin. Include in the statement the extent and distribution of the inflammation.

F. Unit VI. Periodontal Health, Gingival Disease and Conditions

1. Describe the characteristics of periodontal health.
2. Define and describe the three categories of periodontal health according to the 2017 AAP World Workshop.
3. Describe the differences between an intact periodontium and a reduced periodontium.

4. Identify the two categories Gingival Disease and Conditions according to the 2017 AAP World Workshop.
5. Compare and contrast the etiologic factors associated with dental biofilm-induced gingivitis and non-plaque-induced gingival diseases.
6. Differentiate papillary gingivitis, marginal gingivitis, and diffuse gingivitis.
7. Identify and discuss the systemic, medications, or malnutrition factors that may affect the host inflammatory response to the biofilm.
8. Discuss the conditions of Non-Plaque-Induced Gingival Disease and Conditions.

G. Unit VII. Periodontitis

1. Define periodontitis and identify the three major forms of periodontitis (Units VII-IX) according to the AAP/EFP 2017 Classification of Periodontal and Peri-Implant Diseases and Conditions.
2. Recognize and describe clinical and radiographic features of periodontitis.
3. Define clinical attachment loss (CAL) and explain its significance in the periodontal disease process.
4. Explain and discuss the warning signs of periodontitis.
5. Identify the Periodontitis Staging and Grading System according to the AAP/EFP 2017 Classification of Periodontal and Peri-Implant Diseases and Conditions.
6. Describe and discuss the staging system of periodontitis.
7. Describe and discuss the extent and progression of periodontitis.
8. Discuss the therapeutic goals and outcomes of periodontal therapy for periodontitis.
9. Discuss the terms recurrent and refractory forms of periodontitis.
10. Identify and discuss examples of periodontitis case staging and grading.

H. Unit VIII. Other Conditions Affecting the Periodontium

1. Differentiate between a periodontal condition and periodontal disease.
2. Describe the clinical presentation of necrotizing periodontal diseases.
3. Compare and contrast the tissue destruction that occurs in necrotizing gingivitis and necrotizing periodontitis.
4. Discuss the mucogingival deformities and conditions around teeth according to the AAP/EFP 2017 Classification of Periodontal and Peri-Implant Diseases and Conditions.
5. Explain the Miller and Cairo classification systems used to classify gingival recession.
6. Name several local factors, such as tooth-related or prosthesis-related factors, that may contribute to the initiation and progression of periodontitis.

I. Unit IX. Peri-Implant Health and Diseases

1. Discuss the components of a conventional dental implant and restoration.
2. Compare and contrast the periodontium of a natural tooth with the peri-implant tissues that surround a dental implant.
3. Define and distinguish the key differences between peri-implant health, peri-implant mucositis, and peri-implantitis.
5. Recognize and describe peri-implant diseases clinically and radiographically.
6. Describe the clinical routine monitoring of peri-implant health and disease recognizing it as the comprehensive periodontal examination for dental implants.
7. Describe the guidelines for professional maintenance of patients with dental implants.
8. Given a clinical scenario, research and demonstrate proper patient self-care of dental implants.

J. Unit X. Clinical Decision-Making for Periodontal Care

1. List the three fundamental diagnostic questions used when assigning a periodontal diagnosis.
2. List the two fundamental diagnostic questions used when assigning a peri-implant diagnosis.
3. Identify the EPCC/Dental Hygiene documents used to appropriately answer each of the fundamental diagnostic questions.
4. Explain the difference between the terms “signs” of a disease versus “symptoms” of a disease.
5. List several overt and hidden signs of periodontal inflammation.
6. Discuss the term silent disease.

7. Explain the term clinical attachment loss.
8. Describe the elements of a well-written diagnosis for gingivitis and periodontitis.
9. Discuss and describe the phases of treatment.
10. Explain why a patient's diagnosis and treatment plan may require modifications at a later point in time.

Part 3: Risk Factors for Periodontal Diseases

K. Unit XI. Basic Concepts of Periodontitis

1. Discuss this statement, "periodontitis is a bacterial infection of the periodontium".
2. Discuss this statement, "The presence of pathogenic bacteria, however, does not necessarily mean that an individual will experience periodontitis."
3. Define the term multifactorial etiology.
4. Define the term biologic equilibrium and discuss factors that can disrupt the balance between health and disease in the periodontium
5. Define and discuss the term risk factors related to periodontal diseases.
6. Define risk assessment and discuss the importance of a periodontal risk assessment in periodontal treatment planning and in comprehensive dental and periodontal evaluation.

L. Unit XII. Oral Biofilms

1. Describe the characteristics of bacteria.
2. Define oral biofilms and explain their relationship during symbiosis versus dysbiosis.
3. Explain and discuss the life cycle (stages) of biofilm development.
4. Recognize the sequence of bacterial colonization and identify the zones of subgingival bacterial attachment.
5. Discuss the historical and current perspectives on the role of bacteria causing periodontitis.
6. State the most effective ways to control dental plaque biofilms.
7. Discuss and examine the disease hypothesis that plaque biofilm may or may not be the sole cause of tissue destruction seen in periodontitis but that the host inflammatory and immune responses may be the cause.

M. Unit XIII. Basic Concepts of Immunity and Inflammation

1. Discuss and explain the term immune system and describe its function including the consequences of an over reactive and under reactive immune response.
2. Describe the role of polymorphonuclear leukocytes, macrophages, B-lymphocytes, and T-lymphocytes in the immune system.
3. Contrast the terms macrophage and monocyte.
4. Describe the three ways that antibodies participate in the host defense.
5. Define the complement system and explain its principle functions in the immune response.
6. Describe the steps in the process of phagocytosis.
7. Define the term inflammatory mediator and give several examples of inflammatory mediators of importance in periodontitis.

N. Unit XIV. Host Immune Response to Plaque Biofilm

1. Define the term host response and explain its primary function.
2. Name factors that can enhance the microbial challenge to the periodontium.
3. Discuss factors that may influence the host's susceptibility.
4. Discuss the events of the inflammatory response and resolution explaining the statement from the text "periodontitis is associated with unresolved inflammation".
5. Explain the term biochemical mediator and identify the three types of mediators.
6. Describe the role of cytokines in the pathogenesis of periodontitis.
7. Describe the role of prostaglandins in the pathogenesis of periodontitis.
8. Describe the effect of matrix metalloproteinases (MMPs) on periodontal tissues.
9. Summarize the current theory of pathogenesis.
10. Identify and describe the four histological stages in the development of periodontal disease.
11. Explain the phases of the bone remodeling cycle.

12. Explain the significance of a balanced OPG-to-RANKL ratio.
13. Describe the link between periodontitis and RANKL-mediated bone resorption.

O. Unit XV. Systemic Risk Factors that Amplify Susceptibility to Periodontal Disease

1. Identify and discuss several systemic diseases/conditions that may modify the host response to periodontal pathogens.
2. Discuss the potential implications of these systemic conditions on the periodontium: uncontrolled diabetes, leukemia, and acquired immunodeficiency syndrome.
3. Describe the significance of the AGE-RAGE interactions and its role in amplifying periodontal inflammation.
4. Discuss how stress may affect the periodontium.
5. Discuss how hormone alterations may affect the periodontium.
6. Discuss the current theory and relationship of metabolic syndrome and periodontal disease.
7. Define the term osteoporosis and discuss the link between skeletal osteoporosis and alveolar bone loss in the jaw.
8. Discuss the implications of Down syndrome on the periodontium.
9. Name three medications that can cause gingival enlargement.
10. Recognize the importance of educating patients about the relationship between oral health and systemic diseases, states, or conditions.
11. Given a clinical situation arises, explain the risk factors that may have contributed to the severity of your patient's periodontal disease.

P. Unit XVI. Local Factors Contributing to Periodontal Disease

1. Define and discuss local contributing factors.
2. Describe local factors that contribute to the retention and accumulation of plaque biofilm.
3. Identify and differentiate the location, composition, modes of attachment, mechanisms of mineralization, and pathologic potential of supra- and subgingival calculus deposits.
4. Describe local contributing factors that can lead to direct damage to the periodontium.
5. Explain the role of trauma from occlusion as a possible contributing factor in periodontal disease.
6. Discuss the emerging evidence on the association between nutrition and periodontal disease and recommendations for applying this information in a clinical setting.
7. Explain that tobacco use is a major risk factor for the onset and progression of periodontal disease.
8. Given a clinical scenario, describe and apply tobacco cessation services as an integral part in the management of periodontal patients.

Part 4: Assessment and Planning for Periodontal Patients

Q. Unit XVII. Clinical Periodontal Assessment

1. Discuss the importance of performing a thorough and accurate periodontal assessment.
2. List the components of a comprehensive periodontal assessment.
3. Describe how to evaluate each component in the comprehensive periodontal assessment.
4. Explain how to calculate the width of attached gingiva.
5. Explain how to calculate clinical attachment level given several different clinical scenarios.
6. Discuss the difference of a periodontal screening examination and a comprehensive periodontal examination.
7. Given a clinical scenario, calculate and document the clinical attachment levels for a patient with periodontitis.
8. Given a clinical scenario using the AAP/EPCC Guidelines for Developing a Dental Hygiene Diagnosis, develop and document a diagnosis statement.
9. Discuss the emerging supplemental diagnostic tests available for certain patients.

R. Unit XVIII. Radiographic Analysis of the Periodontium

1. Describe dental radiographic characteristics of the healthy periodontium.
2. Describe early dental radiographic evidence of periodontal disease.

3. Describe the limitations of dental radiographs that all clinicians should keep in mind when viewing radiographs.
4. Explain the difference between vertical and horizontal alveolar bone loss as seen in dental radiographs.
5. Given a selection of sample dental radiographs, discuss and analyze the condition of the periodontium radiographically according to the AAP classifications.

Part 5: Implementation of Therapy for Patients with Periodontal Disease

S. Unit XIX. Nonsurgical Periodontal Therapy

1. Explain the term and name four goals for nonsurgical periodontal therapy.
2. Explain the role of interdisciplinary collaborative care in nonsurgical periodontal therapy.
3. List the types of procedures included in nonsurgical periodontal therapy.
4. Write a typical treatment plan for nonsurgical therapy for (1) a patient with dental biofilm-induced gingivitis and (2) a patient with generalized stage I, grade A periodontitis.
5. Summarize the value of periodontal instrumentation and explain why the preservation of root cementum is important during periodontal mechanical instrumentation.
6. Discuss the end point of periodontal instrumentation.
7. Describe dentinal hypersensitivity and discuss strategies for managing dental hypersensitivity during and after nonsurgical therapy.
8. Explain why re-evaluation is an important step during nonsurgical therapy.
9. List steps in an appointment for re-evaluation of the results of nonsurgical therapy.
10. Describe the rationale and list the indications for referring a patient to a periodontist.
11. Explain the importance of patient self-care techniques as a key element in control of periodontal disease.
12. Discuss the possible changes in the periodontium due to disease, examples include open embrasure spaces, exposure of root concavities, and attachment loss.
13. In a clinical setting, recommend, explain, and demonstrate appropriate toothbrush selection, interdental aids, tongue cleaning, and products to patients with type II and III embrasure spaces, recession, and exposed root concavities.
14. Discuss the advantages and disadvantages of patient home irrigation and professional irrigation delivery systems.
15. Compare the systemic and topical delivery systems of chemical agents discussing why chemical agents are not routinely used in the treatment of periodontal disease.
16. Discuss the criteria that must be met for chemical agents to be effective.
17. Discuss the controlled-release delivery devices.
18. Review the term therapeutic mouth rinses discussing the ingredients and characteristics effective mouth rinses should possess.
19. Review toothpaste active ingredients that can reduce the severity of gingivitis.

T. Unit XX. Host Modulation Therapy

1. Define host modulation therapy.
2. Discuss the importance of host modulation therapy including the biochemical mediators that activate an inflammatory response.
3. Discuss the potential and on-going research of host modulation therapy as part of the comprehensive management of periodontal patients.

U. Unit XXI. Periodontal Surgical Concepts for the Dental Hygienist

1. Explain and compare the objectives for periodontal nonsurgical and surgical treatment.
2. Discuss the indications and contraindications for surgery.
3. Using the appropriate terminology, describe the types of wound healing from periodontal surgery.
4. Explain the difference between healing by primary intention and healing by secondary intention.
5. Describe the indications, contraindications, and methodology for the most-commonly performed periodontal surgical procedures.

6. Describe and explain the term periodontal plastic surgery.
7. View and discuss various surgical videos.
8. Describe and demonstrate various dental materials, rationale, and techniques for suturing and placement of periodontal dressings in periodontal therapy.
9. Discuss the special considerations for postoperative management following various periodontal surgical procedures for the dental hygienist.

V. Unit XXII. Acute Periodontal Conditions

1. Identify and describe the three types of abscesses of the periodontium.
2. List the possible causes and management of abscesses of the periodontium.
3. Explain the comparison between the periodontal abscess and the pulpal abscess including how to classify the lesions.
4. Describe the typical treatment steps for a gingival abscess, a periodontal abscess, and a pericoronal abscess.
5. Identify and describe the characteristics of the three necrotizing periodontal diseases.
6. Discuss the typical treatment steps for a patient with necrotizing gingivitis, necrotizing periodontitis, and necrotizing stomatitis.
7. Describe the symptoms and management of primary herpetic gingivostomatitis.

Part 6: Health Maintenance for Treated Periodontal Patients

W. Unit XXIII. Management of Periodontal Maintenance Therapy

1. Given in clinical patient care, students will manage patients in a safe, ethical, and professional manner.
2. Given in clinical situations, discuss and demonstrate effective oral and written communications skills with patients, colleagues, other professionals, and lay people.
3. Explain some strategies that can be used to improve patient compliance.
4. Describe and discuss the importance and goals of periodontal maintenance therapy.
5. Explain and describe the steps performed during a periodontal maintenance appointment.
6. Describe how to determine the frequency of maintenance care.
7. Discuss the clinical signs of periodontal disease recurrence and the management of patients with disease recurrence.
8. Discuss the importance of complete and accurate electronic medical records.
9. Discuss how the quality and accurate patient record documentation serves as a standard means of communication.
10. Discuss and describe the management of root caries.

X. Unit XXIV. Linking Periodontitis with Systemic Disease

1. Review systemic factors can influence the progression and severity of periodontal disease.
2. Identify and discuss the periodontitis potential contributing factor in the pathogenesis of certain diseases.
3. Define and explain the difference between association and causation between oral health and systemic health.
4. Given clinical opportunity arises, educate patients on the link between periodontitis and systemic disease.

III. THECB Learning Outcomes (WECM)

Upon successful completion of this course, students will:

1. Contrast normal and abnormal periodontium
2. Analyze the etiology and pathology of periodontal diseases.
3. Differentiate treatment modalities used for therapy and prevention.
4. Interpret periodontal assessment data to develop a dental hygiene care plan.

IV. Evaluation

A. Course Grading Scale

- A = 100 - 93
- B = 92 - 83
- C = 82 - 75
- D = 74 - 70
- F = 69 and below

The minimum acceptable numerical number is a 75% as determined by the program's promotion and graduation policies.

If the final numerical number for the course is .5 or higher the number will be rounded up to the next number.

B. Clinical Labs

Periodontology integrates the basic dental and behavioral sciences; the course is fundamental to the clinical practice of dental hygiene. This course provides the didactic portion enabling the dental hygiene student to recognize and differentiate periodontal health from active and inactive disease, ability to identify and assess periodontal risk factors, and provide a comprehensive periodontal examination. The course also provides information allowing students to formulate a dental hygiene treatment plan and to implement non-surgical periodontal and maintenance therapy on dental prosthesis, dental implants, and the natural dentition. The course further assists the dental hygiene student to recognize the need for medical and dental recommendations and prescribe specific oral hygiene recommendations for patients to maintain periodontal health.

The dental hygiene student is continually evaluated on the above procedures during patient care. Actual lab and clinical instructions by the instructor may be integrated depending upon clinical availability, patient needs and criteria, and the current level of the dental hygiene student. Clinical observations by the instructor or other instructors often determine areas that require additional coverage or emphasis throughout the semester in the classroom or during patient care.

The course includes comprehensive patient case studies. These case developments and presentations incorporate evaluation of the components of the comprehensive periodontal assessment, allowing AAP lab practice to classify the disease, develop a dental hygiene diagnosis, formulate treatment and evaluation plans. The case studies require critical thinking skills and the ability to simulate health and/or disease based on assessments.

The course will integrate display of and demonstration via hands on or videos of dental materials and techniques used in various periodontology procedures.

The course will employ the *Patterson Eaglesoft Dental Program System* for electronic practice documentation of forms and computerized patient records. *The Eaglesoft Program* houses all the EPCC Dental Hygiene Program's required legal forms, students' worksheets and practice forms, instructors' grading and tracking procedures; it is the standardization of EPCC Dental Hygiene Program clinical data where all members use the same templates for gathering data, same abbreviations, and organization of forms. In the Periodontology lab activities, students practice documentation of the comprehensive periodontal examination in the dental chart and compute worksheets according to the *Eaglesoft* templates.

V. Disability Statement (Americans with/Disabilities Act [ADA])

EPCC offers a variety of services to persons with documented sensory, mental, physical, or temporary disabling conditions to promote success in classes. If you have a disability and believe you may need

services, you are encouraged to contact the Center for Students with Disabilities to discuss your needs with a counselor. All discussions and documentation are kept confidential. Offices located: VV Rm C-112 (831-2426); TM Rm 1400 (831-5808); RG Rm B-201 (831-4198); NWC Rm M-54 (831-8815); and MDP Rm A-125 (831-7024)

VI. 6 Drop Rule

Students who began attending Texas public institutions of higher education for the first time during the Fall 2007 semester or later are subject to a 6-Drop limit for all undergraduate classes. Developmental, ESL, Dual Credit and Early College High School classes are exempt from this rule. All students should consult with their instructor before dropping a class. Academic assistance is available. Students are encouraged to see Counseling Services if dropping because exemptions may apply. Refer to the EPCC catalog and website for additional information

VII. Title IX and Sex Discrimination

Title 9 (20 U.S.C. 1681 & 34 C.F.R. Part 106) states the following "No person in the United States shall, on the basis of sex, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any educational program or activity receiving Federal financial assistance." The Violence Against Women Act (VAWA) prohibits stalking, date violence, sexual violence, and domestic violence for all students, employees and visitors (male and female). If you have any concerns related to discrimination, harassment, or assault (of any type) you can contact the Assistant to the Vice President for Student and Enrollment Services at 915-831-2655. Employees can call the Manager of Employee Relations at 915-831-6458. Reports of sexual assault/violence may also be reported to EPCC Police at 915-831-2200.

VIII. Dental Hygiene Entry-Level Competencies

- C.4 Use evidence-based decision making to evaluate emerging technology and treatment modalities to integrate into patient dental hygiene care plans to achieve high-quality, cost-effective care.
- C.5 Assume responsibility for professional actions and care based on accepted scientific theories, research, and the accepted standard of care.
- C.7 Integrate accepted scientific theories and research into educational, preventive, and therapeutic oral health services