

**WEST LOS ANGELES COLLEGE
DEPARTMENT OF DENTAL HYGIENE**

- I. **DH 200:** CARIOLOGY AND OCCLUSION
- II. **PREPARED BY:** CARLOS SERMEÑO, R.D.H.A.P., B.S.
- III. **REVISED FOR:** FALL 2014
- IV. **PREREQUISITES:** COMPLETION OF ALL ATTEMPTED DENTAL HYGIENE COURSES WITH A GRADE OF "C" OR BETTER
- V. **UNITS AND HOURS:** ONE UNIT, MONDAY, 8:00 am to 9:05 am
- VI. **COURSE INSTRUCTOR:** CARLOS SERMEÑO, R.D.H.A.P., B.S.
EMAIL: sermenoc@gmail.com
OFFICE HOURS:
MONDAY: 3:00 PM – 5:00 PM or
by appointment.

VII. **COURSE DESCRIPTION:**

This course provides understanding, recognition and proper treatment of dental tissue pathology. Lectures and discussion cover the aspects of occlusal dysfunction, dental caries, and dental desensitization.

VIII. **REQUIRED TEXT:**

BATH-BALOGH, M & FEHRENBACH, M. (2012). *DENTAL EMBRYOLOGY, HISTOLOGY AND ANATOMY, 4th EDITION*, ELSEVIER: MISSOURI.

DARBY, M., WALSH, M. (2009) DENTAL HYGIENE THEORY AND PRACTICE. 3RD EDITION, SAUNDERS: PHILADELPHIA.

IX. **SUGGESTED REFERENCES:**

TMJ Disorders:

<http://www.nidcr.nih.gov/oralhealth/topics/tmj/tmjdisorders.htm>

Additional literature may be provided during the course.

X. **PROGRAM COMPETENCIES:**

Program competency #1: Adhere to the American Dental Hygienist's Associations' code of ethical conduct and apply this code to established state and federal laws, recommendations, and regulations in the provision of dental hygiene care.

Program competency#3: Understand and interpret the scientific literature and research as it relates to the evidence-based practice of dental hygiene.

Program competency#4: Utilize current technology to enhance education, patient care, research and professional growth.

Program competency #8: Systematically collect, analyze and record assessment data on the general, oral, periodontal, and psychosocial health status of the child, adolescent, adult, geriatric and special populations using methods consistent with medico-legal principles.

Program Competency #9: Integrate the principles of behavioral, dental, dental hygiene sciences to formulate, implement and evaluate a comprehensive dental hygiene treatment plan for the patient to attain and maintain optimal oral health based on accurate, consistent and complete assessment data and modify treatment as necessary.

Program competency #12: Apply problem solving strategies and critical thinking to insure comprehensive oral health care for individuals, groups and communities.

XI. STUDENT LEARNING OUTCOMES:

1. Critical Thinking: Analyze problems by differentiating fact from opinions, using evidence, and using sound reasoning to specify multiple solutions and their consequences.

Assessment: Students will use case studies and evidence based research to recognize TMJ disorders, recognition of, and assessing primary and secondary oral trauma and steps to be taken.

2. Communication: Effectively communicate thought in a clear, well-organized manner to persuade, inform, and convey ideas in academic, work, family and community settings.

Assessment: Students will complete a TMD examination, discuss findings, implications, referrals, and modifications needed for proper patient care. Communicate effectively with patient in clinical setting, and small group discussions in the classroom.

3. Ethics: Practice and demonstrate standards of personal and professional integrity, honesty and fairness; apply ethical principles in submission of all college work.

Assessment: Students will choose an appropriate patient to complete a clinical TMD evaluation, submit findings, discussion of findings, needed referrals, evaluation grade based on clinical performance and professionalism toward patient.

XII. COURSE GOALS AND OBJECTIVES:

As a result of lectures and assigned readings, the student will, on a written examination, be able to:

Detect TM Disorders

1. Describe the relationship of form-function to the cause of dysfunctional conditions.

- | | |
|----------------------|------------------------------|
| a. interference | e. therapeutic occlusion |
| b. centric occlusion | f. physiologic occlusion |
| c. dysfunction | g. primary occlusal trauma |
| d. centric relation | h. secondary occlusal trauma |

2. List the signs and symptoms of trauma from occlusion according to:

- a. radiographs
- b. visual examination

3. Complete correctly the U.C.L.A. Hospital and Clinics form for functional evaluation of the occlusion evaluation:

- | | |
|----------------------|----------------------------|
| a. maximum opening | e. occlusion interferences |
| b. deviation | f. RCP to ICP slide |
| c. T.M. joint sounds | g. molar classification |
| d. joint tenderness | h. muscle tenderness |

4. Define the following terms:

- a. intercuspal position
- b. centric occlusion
- c. centric relation
- d. orthofunction
- e. dysfunction
- f. traumatic occlusion
- g. ideal occlusion

5. Define bruxism and briefly describe the contributing etiology and significance of the phenomenon.
6. Identify the role of the dental hygienist in TM Disorders.
7. Describe the 3 categories of TMJ disorders.
8. Identify the sequel of symptoms which characterize stomatognathic dysfunction.
9. Describe and define the difference between static and functional occlusion.
10. Identify the TMJ and how it differs from any other joint in the body.
11. List six methods of TMJ disorders treatment.
12. Relate the purpose, advantages and disadvantages of a maxillary bite plane splint.
13. Describe the epidemiological and social characteristics in patients who suffer from jaw pain and dysfunction problems.
14. Identify and differentiate the concepts and characteristics of Orthofunction and dysfunction.
15. Describe and differentiate the common signs and symptoms of:
 - a. disorders within the muscles of mastication
 - b. disorders within the TMJ
 - c. disorders of the occlusion
 - d. common disorders not related to the TMJ, muscles mastication, or dentition which cause jaw pain and dysfunction.
16. Describe the 4 most common complaints and symptoms patients with jaw pain and dysfunction experience.
17. Recognize from a history the factors that perpetuate or cause jaw pain and dysfunction.
18. Describe the mechanism by which abnormal occlusion contributes to jaw pain and dysfunction problems and discuss the pathogenesis of progressive TMJ dysfunction.
19. Describe possible general principles appropriate to all TM disorder patients.
20. Describe physical methods of ice, heat and manual or self-conducted range of motion procedures applicable to TM disorders.
21. Discuss the usefulness of multi-professional approaches in managing TM disorder patients.

Dental Caries

22. Describe and discuss all dental caries theories, including their evolution to present day form, and CAMBRA (Caries Management by Risk Assessment).
23. Discuss the role of microorganisms in the etiology of dental caries.

24. Analyze the host factors of saliva and tooth and describe their role in the dental caries process.
25. Analyze the diet factor and its role in dental caries.
26. Evaluate the different methods of prevention of dental caries:
 - a. Fluorides
 - b. Sealants
 - c. Other agents
27. Define saliva buffer capacity and its relationship to dental caries. List the chief buffer systems of saliva.
28. List the pathological conditions whose side effects include decreased salivary flow.
29. Discuss caries activity testing. List the current concepts and methods for identifying caries prone individuals.
30. Identify the antibacterial factors contained in saliva.
31. Discuss the tooth as a host component and the relationship that exists between:
 - a. occlusion
 - b. susceptibility of different teeth and surface sites
 - c. enamel structure
32. List the types of dental caries and the bacteria associated with each type.
33. Compare the role of Lactobacilli to Streptococcus mutans in dental caries.
34. Identify factors which enter into the cariogenicity of carbohydrates in the diet and protective factors in the diet.
35. Define the role of starches in the dental caries process.
36. Identify methods of dental caries prevention and discuss how they affect the
 - a. Host,
 - b. Diet and
 - c. Bacteria
37. List and discuss different the histological features of the carious lesion.

Hypersensitivity

38. Describe and discuss dental hypersensitivity and explain how it affects the scaling procedure. State predisposing factors.
39. List the methods of hypersensitivity control to assure patient comfort.
40. List the steps in the application of a desensitizing medicament in proper sequence.
41. List the criteria for an acceptable therapeutic agent in treating dentin hypersensitivity.
42. Name the treatment modalities for hypersensitivity.
43. List the different classifications of tooth trauma.
44. Recognize and differentiate the common signs & symptoms of tooth trauma.
45. Describe appropriate preventive and post-trauma treatment protocols.

Fractured Tooth Syndrome:

46. Recognize & list the common signs & symptoms associated with a fractured tooth syndrome, including:

- a. clinical examination
- b. radiographic interpretation

47. List treatment options & prognosis of a fractured tooth.

48. Recognize & list the common signs & symptoms associated with abfraction.

Course SLO	Criterion Level
1. Perform research through case studies and evidence-based research to effectively administer a TMD screening evaluations on a patient.	At least 80% of students will achieve a score of at least 75% on this SLO.
2. Analyze the findings, implications, referrals and modifications needed for proper patient care after completion of a TMD examination.	At least 80% of students will achieve a score of at least 75% on this SLO.
3. Follow appropriate patient selection to complete a clinical TMD evaluation and provide professional and ethical care.	At least 80% of students will follow all provided guidelines.

XIII. METHODS OF INSTRUCTION:

- Lecture
- Group discussion
- Learning Activities

XIV. METHODS OF EVALUATION:

- 1. Attendance, participation, research papers, unannounced or announced quizzes may be given at instructor's discretion and will be calculated into attendance and participation (All quizzes will be given promptly at the start of class. If you are not in the classroom at that time, you will not be allowed to take the quiz) – 20 points
- 2. TMD screening evaluation (to be completed in clinic) - 10 points
- 3. Midterm examination - 30 points
- 4. Final examination (including all the course material) - 40 points

Course letter grade will be based on the following scale:

- 90 – 100 points = A
- 80 - 89 points = B
- 70 - 79 points = C
- 60 - 69 points = D

Grade will be accumulative, and final grade must be passed at a minimum of 70% (C) or better.

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XV. COURSE CONTENT OUTLINE*:

DH 200 - CARIOLOGY AND OCCLUSION

LECTURE SCHEDULE - FALL 2014 (SCHEDULE SUBJECT TO CHANGES)

SESSION	LECTURE TOPIC*	READING ASSIGNMENT
9/1	Labor Day	
9/8	Course Introduction, Goals and Objectives	Chapter 5 - Fehrenbach Chapter 14 - Darby (Pages 251-265)
9/15	Occlusal Biology	Chapter 11 - Perry
9/22	Occlusal Trauma	Chapter 11 - Perry
9/29	Occlusal Evaluation and Therapy	Chapter 11 - Perry
10/6	Screening for TMD: Subjective and Objective Evaluation. TMD Screening Assignment	Demonstration
10/13	MIDTERM EXAM	
10/20	Hypersensitivity	Darby, Chapter 38
10/27	Dental Trauma: Fractures, crown and root, luxation, avulsion, perio-endo lesions	Darby, Chapter 30 The Dental Trauma Guide - International Association of Dental Traumatology The Periodontal-Endodontic Continuum: A Review (Journal of Conservative Dentistry)
11/3	Cariology Introduction: History and Theories, Caries Development	Darby-Chapter 16
11/10	Cariology: Caries Risk Factors and Reduction	Darby-Chapter 16
11/17	CAMBRA	JADA Article Darby-Chapter 16
11/24	Cracked Tooth Syndrome	Articles
12/1	Caries Detection	Caries I.D.® and Diagnodent ® User manual / Clinical performance of a laser fluorescence device for detection of occlusal caries lesions- Lussi, Megert, et al.
12/8	Caries Detection	Demonstration
12/TBA	FINAL EXAMINATION	All course material

**Lecture may include material from provided literature that you may not have listed in your current books.*

**** SCHEDULE SUBJECT TO MODIFICATIONS.**