

WEST LOS ANGELES COLLEGE  
DEPARTMENT OF DENTAL HYGIENE

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I. DH 156 HISTOLOGY AND EMBRYOLOGY OF ORAL TISSUES

II. COURSE INSTRUCTOR: JOY OGAMI AVILA, R.D.H., M.S.

III. REVISED FOR: SPRING 2014

IV. PREREQUISITES: ENROLLMENT IN THE DENTAL HYGIENE PROGRAM AND PASSING OF ALL FALL COURSES WITH A "C" OR BETTER

V. UNITS AND HOURS: 2 UNITS/2 HOURS, WEDNESDAY 1:00 P.M. – 3:20 P.M.

VI. OFFICE HOURS: WEDNESDAYS 10:30 A.M. – 12:00 P.M. and by appointment

VII. COURSE DESCRIPTION:

Through lecture and demonstration the normal histologic structure and embryonic development of oral human tissues will be presented. Emphasis will be on differentiating normal from abnormal structure and function in the context of health and disease. Upon completion of this course the student will be able to make appropriate clinical applications of oral histology and embryology. These applications include understanding relationships between structure and function, differentiating normal from abnormal histology, and understanding the mechanisms of common orofacial development defects.

VIII. REQUIRED TEXT:

Bath-Balogh and Fehrenbach. (1997). *Illustrated Dental Embryology, Histology and Anatomy, 3<sup>rd</sup> Edition*. Philadelphia: Saunders. ISBN: 978-1-4377-1730-3

IX. SUGGESTED REFERENCES:

Avery, J (2006). *Essentials of Oral Histology and Embryology, 3<sup>rd</sup> Edition*. St. Louis: Mosby.

X. STUDENT LEARNING OUTCOMES: (SLOs)

Institutional SLOs

- A. Critical Thinking: Analyze problems by differentiating fact from opinions, using evidence, and using sound reasoning to specify multiple solutions and their consequences. *Students will answer a series of practical and written questions that demonstrates comprehension and application of histologic components.*
- C. Quantitative Reasoning: Identify, analyze, and solve problems that are quantitative in nature. *Students will identify challenges with normal histological or embryologic development or function and adapt their clinical treatment modalities.*

Program SLOs

**Professionalism:**

- 2. Perform self-assessment for life long learning to provide evidence-based practice of dental hygiene.
- 3. Understand and interpret scientific literature and research as it relates to the evidence-based practice of dental hygiene.

**Health Promotion and Disease Prevention:**

- 7. Provide the values of oral health, general health and wellness in individuals and populations with identified risk factors and develop strategies that promote health related quality of life.

**Patient Care:**

- 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.
- 12. Apply problem solving strategies and critical thinking to insure comprehensive oral health care for individuals.

Course Objectives

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

1. Identify and describe several types of epithelial and connective tissues.
2. Describe basic histologic techniques of tissue preparation and microscopic examination.
3. Identify common cell organelles by structure, intracellular location, and function.
4. Describe the cellular mechanisms and organelles involved in protein synthesis and secretion.
5. Understand the histologic organization of epithelial tissue, its mechanism of renewal, and potential for disease.
6. Describe and differentiate the types of connective tissue (connective tissue proper, cartilage, bone, and adipose tissue) by histologic structure and function, and give common examples of each.
7. Describe and differentiate hyaline, fibro-, and elastic cartilage and give examples in the orofacial region. Describe the components of blood, identify and explain the functions of the various blood cells, and describe the histologic structure of arteries, veins, and capillaries.
8. Identify and differentiate striated, smooth, and cardiac muscle by histologic structure and function.
9. Describe the basic histologic organization and features of nerve tissue.
10. Differentiate lining, masticatory and specialized mucosa by location in the oral cavity, histologic structure, and clinical appearance.
11. Describe the complex structures in the orofacial region and understand their interactions in maintaining good oral health
12. Describe the role of the primary germ layers, neural crest cells, and pharyngeal arches in the development of the orofacial region.
13. Describe normal lip and palate development and explain the mechanisms of cleft lip and cleft palate as common examples of orofacial defects.
14. Describe the embryologic stages of orofacial development including development of the upper and lower jaws.
15. Differentiate intramembranous and endochondral bone formation and identify sites of each process in the development and growth of the skull. Understand the histologic structure of sutures and their role in the normal and abnormal growth of the skull.
16. Know the timeline of orofacial development and the role of the dental hygienist in educating patients about maternal health and the affect of tetragens such as alcohol.
17. Understand the sequence of normal tooth development and eruption and explain the origin of common dental defects. Describe the histologic structure of alveolar bone and its remodeling and regeneration potential.
18. Describe and differentiate enamel, dentin, and cementum by histologic structure, formation during tooth development, and potential for repair and/or renewal.
19. Understand the histologic composition of the dental pulp, its functions, and regressive changes
20. Describe the histologic structure of the periodontium, including the periodontal ligament and

- epithelial attachment, and how these tissues are affected by periodontal disease and therapy.
21. Explain the concept of biologic width in the context of periodontal health around dental restorations.
  22. Describe the histologic structure of the salivary glands and differentiate the parotid, submandibular and sublingual glands by structure and type of secretion.
  23. Understand the histologic structure of the TMJ in the context of potential for clinical problems.

Assessment Criteria:

<u>Course SLO</u>	<u>Assessment Method</u>	<u>Criterion Level</u>
1. Analyze and problem-solve questions relating to dental histology and embryology.	Students will answer questions during midterm and final examinations. Answers will be evaluated using a scantron scanner.	Each question will be answered correctly by 75% of students.
2. Improve their ability to formulate their thoughts and answers in a clear, well-organized manner and to communicate these in a formal class and informal laboratory setting.	Students will develop a patient learning booklet that will be graded according to a rubric.	At least 80% of students will score above a 75% on all areas of the grading rubric for this assessment.

XI. METHODS OF INSTRUCTION:

Lecture, Group Discussion,

XII. METHODS OF EVALUATION:

Quizzes	20%
Project	20%
Midterm	20%
Final Examination	40%

GRADING INFORMATION:

A = 90-100%

B = 80-89%

C = 70-79% (minimum requirement to pass the course is 70%)

D = 60-69%

The Dental Hygiene curriculum is scheduled in a sequence of courses, given only once per year; therefore, all courses and pre-requisites must be completed with a minimum of a "C" grade in order to continue in the Dental Hygiene Program.

Students who receive less than a "C" grade at midterm in any course will be notified by the program director in writing of this status. It is the responsibility of the student to seek help and/or clarification of

the deficiency with the course instructor. Please refer to the college catalog for further information on grading policies and procedures.

\**Quizzes* – Quizzes will be a combination of question types. Quizzes will be administered during the first 15 minutes of each class session where a quiz is scheduled. If a student arrives late, they can take the quiz with the remaining time. Once the time for the quiz is completed, all quizzes will be turned in. No makeup quizzes will be given. If a quiz is not taken, the student will receive zero (0) for that quiz.

\*\* *Exams* – The Midterm Exam is a sectional exam, and the final exam is cumulative. All exams will be composed of a Part A – identification and a Part B – written exam of multiple choice and short answer questions. Students must receive a “C” or better on the midterm. If a student receives a grade less than a “C”, they will meet with the instructor and dental hygiene director to discuss a remediation plan. No retakes of the final examination will be given. If an exam is not taken, the student will receive a zero (0) for that exam.

*Spelling and Grammar* – Verbal and written communication is an important aspect of professionalism therefore, spelling and grammar errors cited by the course instructor on quizzes, exams, and the report will result in point deductions.

*Attendance* – All students are expected to be on time and attend all class sessions to be successful in this course. If absence from this course is unavoidable, call Ginny Williams at 310.287.4464 to leave a message regarding your absence. It is the student’s responsibility to check with the instructor regarding work missed and to check with classmates regarding class discussions and notes. Excessive missed classes or tardiness will be addressed by the instructor and will result in loss of points.

*Professionalism* – Students are expected to read ahead of class lectures to be prepared for each class. Additionally, cell phones may not be used for any reason during class.

### XIII. DH 156 LECTURE SCHEDULE AND OUTLINE:

<i>Session/Date</i>	<i>Topic</i>	<i>Reading/Preparation</i>
Session #1 2/12/14	Review of Course Syllabus Face and Neck Regions	Chapter 1
Session #2 2/19/14	<i>Quiz #1</i> Oral Cavity and Pharynx	Chapter 2
Session #3 2/26/14	Overview of Prenatal Development	Chapter 3
Session #4 3/5/14	<i>Quiz #2</i> <b>Development of the Face and Neck</b>	Chapter 4
Session #5 3/12/14	Development of Orofacial Structures	Chapter 5
Session #6 3/19/14	<i>Quiz #3</i> Tooth Development and Eruption	Chapter 6

Session #7 3/26/14	<i>Midterm Exam</i>	Covers material from Chapter 1-6
4/2/14	Overview of the Cell	Chapter 7
Session #8 4/9/14	<b>No Class - Spring Break</b>	
Session #9 4/16/14	Basic Tissue	Chapter 8
Session #10 4/23/14	<i>Quiz #4</i> Oral Mucosa	Chapter 9
Session #11 4/30/14	Gingival and Dentogingival Junctional Tissue	Chapter 10
Session #12 5/7/14	Head and Neck Structures	Chapter 11
Session #13 5/14/14	<i>Quiz #5</i> Enamel	Chapter 12
Session #14 5/21/14	Dentin and Pulp	Chapter 13
5/28/14	Periodontium: Cementum, Alveolar Bone, and Periodontal Ligament	Chapter 14
Session #15 6/4/14	<b><i>Final Examination</i></b>	Cumulative

XIV. GRADING RUBRICS:

<b>DH 156 - Patient Booklet Grading Rubric</b>				
<b>CATEGORY</b>	<b>4</b>	<b>3</b>	<b>2</b>	<b>1</b>
<b>Attractiveness &amp; Organization</b>	The booklet has exceptionally attractive formatting and well-organized information.	The booklet has attractive formatting and well-organized information.	The booklet has well-organized information.	The booklet's formatting and organization of material are confusing to the reader.

Content - Accuracy	All facts in the booklet are accurate.	99-90% of the facts in the booklet are accurate.	89-80% of the facts in the booklet are accurate.	Fewer than 80% of the facts in the booklet are accurate.
Graphics/Pictures	Graphics go well with the text and there is a good mix of text and graphics.	Graphics go well with the text, but there are so many that they distract from the text.	Graphics go well with the text, but there are too few and the brochure seems "text-heavy".	Graphics do not go with the accompanying text or appear to be randomly chosen.
Writing - Organization	Each section in the booklet has a clear beginning, middle, and end.	Almost all sections of the booklet have a clear beginning, middle and end.	Most sections of the booklet have a clear beginning, middle and end.	Less than half of the sections of the booklet have a clear beginning, middle and end.