

**El Paso Community College  
Syllabus  
Part II  
Official Course Description**

<b>SUBJECT AREA</b>	<b>Dental Hygiene</b>		
<b>COURSE RUBRIC AND NUMBER</b>	<b>DHYG 1201</b>		
<b>COURSE TITLE</b>	<b>Orofacial Anatomy, Histology and Embryology</b>		
<b>COURSE CREDIT HOURS</b>	<b>2</b>	<b>1</b>	<b>4</b>
	<b>Credits</b>	<b>Lec</b>	<b>Lab</b>

**I. Catalog Description**

Studies histology and embryology of oral tissues, gross anatomy of the head and neck, tooth morphology, and individual tooth identification. A grade of "C" or better is required in this course to take the next course. **Prerequisites: BIOL 2401 and BIOL 2402 and CHEM 1306 and 1106. Corequisites: DHYG 1103 and DHYG 1219 and DHYG 1239 and DHYG 1304 and DHYG 1431. (1:4). Lab fee.**

**II. Course Objectives**

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

**LECTURE**

**Part I Histology and Embryology**

- A. Unit 1 Development and Structure of Cells and Tissues
  - 1. Define cell structure and function.
  - 2. Discuss cell division.
  - 3. Describe the origin of human tissue.
  - 4. Define the development of human tissue.
- B. Unit 2 Structure and Function of Cells, Tissues, and Organs
  - 1. Describe cells and tissues.
  - 2. Describe organs and organ systems.
- C. Unit 3 Development of the Orofacial Region
  - 1. Define the development of the oropharynx.
  - 2. Define the development of the pharyngeal arches.
  - 3. Define the development of the craniofacial skeleton.
- D. Unit 4 Development of the Face and Palate
  - 1. Define the facial development: Weeks 4 to 7.
  - 2. Define the palatal development: Weeks 7 to 9.
  - 3. Describe malformations.
- E. Unit 5 Development of Teeth
  - 1. Discuss the initiation of tooth development.
  - 2. Define the stages of tooth development.
  - 3. Define the development of the dental papilla.
  - 4. Describe dentinogenesis.
  - 5. Describe amelogenesis.
  - 6. Describe crown maturation.
  - 7. Define the development of the tooth root.

8. Define the development of primary and permanent teeth.
  9. Define the development of supporting structures.
- F. Unit 6 Eruption and Shedding of the Teeth
1. Discuss the preeruptive phase.
  2. Define the prefunctional eruptive phase.
  3. Discuss the functional eruptive phase.
  4. Discuss possible causes of tooth eruption.
  5. List sequence and chronology of tooth eruption.
  6. Discuss shedding of primary teeth.
  7. Compare primary and permanent dentitions.
- G. Unit 7 Enamel
1. Describe physical properties.
  2. Describe the rod structure.
  3. Describe incremental lines.
  4. Describe enamel lamellae.
  5. Describe enamel tufts.
  6. Describe enamel spindles.
  7. Describe surface characteristics.
  8. Describe permeability.
  9. Describe etching.
- H. Unit 8 Dentin
1. Describe the physical properties of dentin.
  2. Discuss dentin classification.
  3. Describe predentin.
  4. Discuss tubular and intertubular relations.
  5. Describe incremental lines.
  6. Describe the granular layer.
  7. Discuss the odontoblastic cell processes.
  8. Describe the dentinoenamel junction.
  9. Describe permeability.
  10. Discuss the repair process.
- I. Unit 9 Dental Pulp
1. Discuss the anatomy of the pulp.
  2. Discuss the histology of the pulp.
  3. Define pain and the pulp-dentin complex.
  4. Define the functions of the pulp.
  5. Identify regressive changes.
- J. Unit 10 Cementum
1. Discuss the role of the cementum on the root surface.
  2. Define the development of cementum.
  3. Describe cellular and acellular cementum.
  4. Describe the physical properties of cementum.
  5. Identify the aging of cementum.
  6. Describe cementicles.
  7. Discuss cemental repair: functional and anatomical.
- K. Unit 11 Periodontium: Periodontal Ligament
1. Describe the organization of the periodontal ligament.
  2. Describe the cells of the periodontal ligament.
  3. Define the functions of periodontal ligament.
  4. Identify the aging of ligament.
- L. Unit 12 Periodontium: Alveolar Process and Cementum
1. Describe the alveolar process.
  2. Discuss cemental support.
  3. Discuss tooth movement.

4. Discuss the aging of alveolar bone and cementum.
  5. Describe edentulous jaws.
- M. Unit 13 Oral Mucosa
1. Describe the structure of the oral mucosa.
  2. Describe the nerves and blood vessels of the oral mucosa.
  3. Describe epithelial nonkeratinocytes.
  4. Identify changes in the oral mucosa with aging.
- N. Unit 14 Biofilms
1. Describe the cuticle.
  2. Describe the acquired pellicle.
  3. Describe plaque.
  4. Describe calculus.
- Part II Orofacial Anatomy**
- O. Unit 15 The Oral Cavity
1. Describe the vestibule.
  2. Describe the oral cavity proper.
  3. Describe other clinical manifestations of the oral cavity.
- P. Unit 16 The Tooth Function and Terms
1. Define the function of teeth.
  2. Describe the crown and root.
  3. Describe tooth tissues.
  4. Define types of teeth.
  5. Describe surfaces of teeth.
  6. Discuss division of surfaces.
  7. Identify line angles.
  8. Identify point angles.
  9. Identify landmarks.
- Q. Unit 17 Fundamental and Preventive Curvatures
1. Discuss the evolution of fundamental and preventative curvatures and proximal alignment of the teeth.
  2. Describe the periodontium.
- R. Unit 18 Occlusion
1. Define position and sequence of eruption.
  2. Define the development of the mesial step.
  3. Describe horizontal alignment.
  4. Describe curves of Spee, curve of Wilson, and sphere of Monson.
  5. Describe vertical alignments.
  6. Discuss occlusion.
  7. Describe an open bite.
  8. Define occlusal classification.
  9. Describe lateral mandibular glide (lateral excursion).
  10. Define protrusion.
  11. Discuss premature contact.
  12. Discuss the fundamentals of ideal occlusion in permanent dentition.
- S. Unit 19 Dental Anomalies
1. Define the classification of dental anomalies.
  2. Describe anomalies in shape.
  3. Describe abnormal crown shapes.
  4. Describe abnormal root formation.

- T. Unit 20 Tooth Identification
  - 1. Discuss the general rules of tooth identification.
  - 2. Identify incisors.
  - 3. Identify canines.
  - 4. Identify premolars.
  - 5. Identify molars.
- U. Unit 21 Osteology of the Skull
  - 1. Identify the different parts of the skull.
  - 2. Describe the landmarks of the skull.
  - 3. Identify the major bones of the skull.
- V. Unit 22 Muscles of Mastication
  - 1. Describe the masseter muscle.
  - 2. Describe the temporal muscle.
  - 3. Describe the medial pterygoid muscle.
  - 4. Describe the lateral pterygoid muscle.
- W. Unit 23 Temporomandibular Joint
  - 1. Describe its structure.
  - 2. Describe its movement.
  - 3. Discuss problems associated with the TMJ.
- X. Unit 24 Muscles of Facial Expression
  - 1. Identify the muscles of the ear.
  - 2. Identify the muscles of the scalp.
  - 3. Identify the muscles of the neck.
  - 4. Identify the muscles of the eyes.
  - 5. Identify the muscles of the nose.
  - 6. Identify the muscles of the mouth.
- Y. Unit 25 Soft Palate and Pharynx
  - 1. Describe the soft palate.
  - 2. Describe the pharynx.
  - 3. Describe the actions of the soft palate and pharynx.
- Z. Unit 26 Nervous System
  - 1. Describe the central nervous system.
  - 2. Describe the peripheral nervous system.
  - 3. Describe the autonomic nervous system.
  - 4. Identify the nerves of the oral cavity and associated structures.
- AA. Unit 27 Arterial Supply and Venous Drainage (Circulation)
  - 1. Discuss arterial supply.
  - 2. Describe venous drainage.
- BB. Unit 28 Nose, Nasal Cavity, and Paranasal Sinuses
  - 1. Describe the nose and nasal cavity.
  - 2. Describe the paranasal sinuses.
  - 3. Define the functions of the sinuses.
  - 4. Discuss clinical problems.
- CC. Unit 29 Salivary Glands
  - 1. Identify the major salivary glands.
  - 2. Identify the minor salivary glands.

## **LABORATORY**

- A. Unit 1 The Oral Cavity
  - 1. Identify structures according to their locations within or around the oral cavity.
  - 2. Use a hand mirror, flashlight, and tongue blade to locate and describe structures according to color, texture, shape, and location.

- B. Unit 2 The Tooth Function and Terms
  - 1. Specify the terms that complete the line angle with the point angle.
  - 2. Indicate if a specific landmark or characteristic is found on the anterior, posterior, or anterior and posterior teeth.
- C. Unit 3 Fundamental and Preventive Curvatures
  - 1. Define the concept-factor model.
  - 2. Describe qualities of the teeth and the periodontium considered to be self-cleansing properties.
  - 3. Describe factors that contribute to self-cleansing properties.
- D. Unit 4 Occlusion
  - 1. Describe an overbite, crossbite, overjet, centric occlusion, openbite, class II division II, class III.
  - 2. Identify anterior relationship.
  - 3. Identify occlusion.
- E. Unit 5 Dental Anomalies
  - 1. Describe common dental anomalies.
  - 2. Classify common anomalies.
- F. Unit 6 Tooth Identification
  - 1. Identify teeth according to their description.
  - 2. Provide appropriate descriptors for specific teeth.
  - 3. Define the number of cusps, roots, and pulp canals of specific teeth.
- G. Unit 7 Osteology of the Skull
  - 1. Use the appropriate term to describe the osseous structures of the face and skull.
  - 2. Identify whether the structures are single or paired and indicate if they are part neurocranium or viscerocranium.
  - 3. Identify structures with their osseous location.
- H. Unit 8 Muscles of Mastication
  - 1. Describe the muscles of mastication.
  - 2. Identify the muscles of mastication according to their origin, insertion, and action.
- I. Unit 9 Temporomandibular Joint
  - 1. Describe the structures and characteristics of the TMJ.
  - 2. Indicate structures according to their inferior or superior location and whether there are one or two structures on one side of the TMJ.
- J. Unit 10 Muscles of Facial Expression
  - 1. Describe the location and characteristics of the facial muscles.
  - 2. Identify the actions of the facial muscles.
  - 3. Associate the scientific names of the facial muscles to their common names.
- K. Unit 11 Soft Palate and Pharynx
  - 1. Identify the location of the muscles of the soft palate and pharynx.
  - 2. Describe the characteristics of the muscles of the soft palate and pharynx.
- L. Unit 12 Nervous System
  - 1. Describe the location and characteristics of the cranial nerves.
  - 2. Identify the functions of the cranial nerves.
- M. Unit 13 Arterial Supply and Venous Drainage (Circulation)
  - 1. Describe the location and characteristics of arteries and veins.
  - 2. Identify the structures that arteries supply.
  - 3. Identify the characteristics of the structures that veins supply.

- N. Unit 14 Nose, Nasal Cavity, and Paranasal Sinuses
  - 1. Describe structures of the nose, nasal cavity, and sinuses.
  - 2. Identify sinuses according to their description or characteristics.
  - 3. Identify the location of the nasal structures.
- O. Unit 15 Salivary Glands
  - 1. Describe the location and characteristics of salivary glands.
  - 2. Identify the major salivary glands according to their characteristics.
  - 3. Identify the minor salivary glands according to their characteristics.

### III. THECB Learning Outcomes (WECM)

- 1. Identify the histological and embryological development of the orofacial structures.
- 2. Locate the major structures of the head and neck.
- 3. Compare and contrast various teeth including the crown and root morphology.

### IV. Evaluation

#### A. Course Condition of Performance Is Divided into Two Sections:

##### 1. Theory

- Histology and Embryology and Orofacial Anatomy each comprise  $\frac{1}{3}$  of the final grade.
  - Seven supervised written examinations from the learning units will be given at scheduled time.
  - There will be unannounced daily quizzes covering the previous lecture. Daily quizzes will make up 10% of the final grade.
  - A comprehensive final exam encompassing both histology and embryology and orofacial anatomy will be scheduled during Final Exam Week.

##### 2. Lab

- Laboratory comprises  $\frac{1}{3}$  of the final grade.
  - There will be two supervised scheduled laboratory exams.
  - There will be unannounced daily quizzes covering the previous lecture. Daily quizzes will make up 10% of the final grade.

#### B. Grading Scale:

A = 93 – 100

B = 83 – 92

C = 75 – 82

D = 70 – 74

F = 69 and below

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

### 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. Dental Hygiene Entry-Level Competencies**

- C.3 Use critical thinking skills and comprehensive problem-solving to identify oral health care strategies that promote patient health and wellness.
- C.7 Integrate accepted scientific theories and research into educational, preventive, and therapeutic oral health services.