



BAKER COLLEGE
STUDENT LEARNING OUTCOMES
DHY1150 Dental Embryology and Histology
1 Semester Hour

Student Learning Outcomes & Enabling Objectives

1. Explain the stages of prenatal development from preimplantation (fertilization) to the fetal period.
 - a. Describe the five cellular processes of the embryonic period.
 - b. Discuss key embryological events occurring weeks 1-8.
2. Classify the histological events involved in the six stages of odontogenesis.
 - a. Define stomodeum, oropharyngeal membrane and Rathke's pouch.
 - b. Explain the significance of stomodeum, oropharyngeal membrane and Rathke's pouch.
 - c. Explain how the oral epithelium gives rise to the dental lamina.
 - d. Identify the various cells and layers associated with the bud, cap and bell stages of tooth development.
 - e. Differentiate between tissues derived from the enamel organ, dental papilla and dental sac.
 - f. Classify dental anomalies according to tissue derivation and stage of occurrence.
3. Analyze the development of the face and neck.
 - a. Identify the structures that derive from each of the branchial arches.
 - b. Describe the structures derived from the frontonasal process.
4. Analyze the development of the palate, nasal cavity and tongue.
 - a. Describe the processes involved with cleft lip/palate formation.
 - b. Interpret the developmental timelines for each of these conditions.
5. Define the cellular organization of structures of the body.
 - a. Define the basic components of a living cell.
 - b. Classify organelles according to their location and function.
6. Classify the four basic tissues of the body (epithelium, connective tissue, muscle, nerve).
 - a. Give examples of where each type is found in the body.
 - b. Describe the different types of oral mucosa: masticatory, lining and specialized.
 - c. Identify the four types of tongue papillae and list the characteristics of each type.
 - d. Compare and contrast the histological features of attached gingiva, unattached gingiva and tissues of the dentogingival junction.
7. Describe the composition and histological features of mature enamel, dentin, cementum and pulp.
 - a. Compare and contrast enamel abnormalities.
 - b. Compare the formation of primary, secondary and tertiary (reparative) dentin.
 - c. Compare and contrast dentin abnormalities.
8. Compare the components of the periodontium and describe the histological characteristics of Cementum, alveolar bone, and the periodontal ligament.
 - a. Analyze the relationship between the periodontal ligament and occlusion.
 - b. Explain the process of bone remodeling in tooth movement and tooth loss.
9. Analyze current professional literature that addresses a topic related to histology and the clinical practice of dental hygiene.

These SLOs are not approved for experiential credit.
Effective: Summer 2018