Miami Dade College

Course Description

DEH1133 | Dental Anatomy, Histology and Physiology | 2.00 credits

This course covers specific tissues of the oral cavity, head, neck and their embryonic development. The students will learn structure, morphology and function of the primary and permanent dentitions.

Course Competencies:

Competency 1: The student will demonstrate knowledge, comprehension, and application of the dental numbering systems, tooth surfaces and tooth functions by:

1. Labeling the correct Universal, Palmer, and International Numbering System to permanent and primary teeth
2. Describing tooth functions to the different types of teeth
3. Listing the correct dental terminology as it pertains to tooth surfaces and anatomy

Competency 2: The student will demonstrate knowledge, comprehension, and application of the two-dentition period by:

1. Identifying the approximate age of a patient using a diagram of a mixed dentition
2. Describing the eruption dates of the primary and permanent teeth

Competency 3: The student will demonstrate knowledge, comprehension, and application of dental tooth anatomy by:

1. Showing the correct location of each primary tooth
2. Describing the general and specific features of primary and permanent teeth
3. Describing tooth morphology and its variations

Competency 4 The student will demonstrate knowledge, comprehension, and application of the anatomy of the oral cavity and pharynx by:

1. Describing the correct anatomical nomenclature
2. Describing the associated surface landmarks of the oral cavity
3. Describing the regions and associated surface landmarks of the head and neck
4. Describing the anatomy of oral mucous membranes, tongue and salivary glands

Competency 5: The student will demonstrate knowledge, comprehension, and application of the bones of the head and neck by:

1. Describing the bones of the head on an adult skull
2. Describing the significant landmarks of the maxilla and mandible
3. Discussing the anatomic components of the temporomandibular joint

Competency 6: The student will demonstrate knowledge, comprehension, and application of the anatomy of the muscles of the head and neck by:

1. Describing the origin and insertion of muscles of the head, including the muscles of mastication and muscles of facial expression
2. Describing the origin and insertion of muscles of the soft palate, pharynx and tongue
3. Describing the functions of the muscles of facial expression and mastication

Competency 7: The student will demonstrate knowledge, comprehension, and application of the anatomy of the nerves of the head and neck by:

1. Describing the cranial nerves and their function
2. Describing the nerve(s) that innervate specific muscles of the head and neck
3. Describing the nerves associated with the oral cavity with emphasis on the three divisions of the trigeminal nerve, and the facial nerve

4. Describing the tissues and teeth anesthetized by specific nerves of the head
5. Contrasting the nerve blocks and local infiltration anesthetic and possible complications

Competency 8: The student will demonstrate knowledge, comprehension, and application of the anatomy of the glandular tissue of the head and neck by:

1. Describing the glandular tissue and associated structures in the head and neck region and their function
2. Listing the lymphatic system and its components
3. Describing the different tonsillar tissues of the head and neck
4. Identifying the patterns of lymph drainage for the head and neck tissues or region
5. Describing the spread of cancer in the head and neck region and its relationship to lymph nodes

Competency 9: The student will demonstrate knowledge, comprehension, and application of the dental histology by:

1. Describing the components of the cell and organelles
2. Describing epithelial, connective tissue, muscle, and nerve tissue
3. Describing the various types of oral mucosa
4. Describing the lamina propria and basement membrane of the oral mucosa
5. Describing the histological components of the enamel, dentin, pulp, cementum, periodontal ligament, alveolar process and gingival tissues
6. Describing the histology of the oral mucous membranes, tongue, and salivary glands
7. Describing the development of bone formation, repair, and remodeling
8. Describing the process of tooth movement that occurs in orthodontics

Competency 10: The student will demonstrate knowledge, comprehension, and application of dental embryology by:

1. Describing the embryonic development of the face and neck, enamel, dentin cementum, pulp, palate, tongue, periodontal ligament, and alveolar bone
2. Describing tooth and root development
3. Describing the formation of the branchial arches
4. Describing the developmental disturbances that may occur during the formation of the palate and lip
5. Describing the stages of tooth development and associated structures
6. Describing the development of multirooted teeth
7. Identifying the stages of primary and permanent tooth eruption
8. Defining possible developmental disturbances that may occur during tooth eruption

Competency 11: The student will demonstrate knowledge, comprehension, and application of the vascular system of the head and neck by:

1. Describing the components of the nervous system and the action of nerves
2. Contrasting afferent and efferent nerves
3. Describing the major divisions of the central and peripheral nervous systems
4. Listing the general functions of the cranial nerves
5. Describing the tissues innervated by each of the nerves of the head and neck
6. Describing specific nerve lesions associated with the head and neck region

Learning Outcomes:

- Communicate effectively using listening, speaking, reading, and writing skills
- Solve problems using critical and creative thinking and scientific reasoning
- Formulate strategies to locate, evaluate, and apply information