

NEW YORK CITY COLLEGE OF TECHNOLOGY
CUNY
Dental Hygiene Department

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Office Hours: Tuesday 4:00 – 5:00PM
Thursday 2:00 – 3:00PM

Course Title: Histology & Embryology

Course Code: Den 1114
Class Hours: 2 per week
Credits: 1

Prerequisites: Admission into the Clinical Dental Hygiene Program

Corequisites: DEN 1112, BIO 2311/BIO2301.1L

Textbooks:

1) “ILLUSTRATED DENTAL EMBRYOLOGY, HISTOLOGY, AND ANATOMY” Third Edition,
Mary Bath-Balogh, Margaret J. Fehrenbach
W.B.Saunders, Philadelphia

2) Workbook “ILLUSTRATED DENTAL EMBRYOLOGY, HISTOLOGY, AND ANATOMY” Third Edition,
Mary Bath-Balogh, Margaret J. Fehrenbach
W.B.Saunders, Philadelphia

Course Description:

DEN 1114 is a fundamental course that will assist in the development of the dental hygiene competencies. Basic principles of histology and embryology are studied with emphasis on tissues of the oral cavity and contiguous structures and their clinical considerations in dental hygiene treatment. Knowledge of the normal tissues of the oral cavity and surrounding structures is the basis for understanding diseases and abnormalities that are commonly encountered in dental hygiene practice.

Also included is the study of the development of the face, oral cavity, the tooth and its surrounding structures.

Course Objectives

At the completion of this course the dental hygiene student will be able to:

Week 1

Identify the components of a cell.
Describe the function of the components of a cell.
Identify the different tissues present in the human body.
Identify the histological components of each tissue studied.
Describe the function of each tissue studied.

Weeks 2, 3, 4

Identify the structure and histology of epithelial and connective tissue.
Describe in detail, the function of epithelial and connective tissue.
Recognize the various locations within the human body of epithelial and connective tissue.

Weeks 5, 6, 7

Define growth and development.
Describe the development of the primitive mouth.
Recognize the various processes in the development of the face.
Outline the process of palatal development.
Identify the components which formulate the palate and the nasal septum.
Discuss the various sequels to improper fusion of the maxillary processes.

Week 8, 9

Identify the various stages of tooth development.
Describe the histological components of the tooth germ.
Classify the cells involved in tooth development.
Discuss root formation.
Recognize the various anomalies which may result from improper tooth development.
Describe the mechanism of tooth eruption.
Understand the shedding of the primary teeth.
Identify all the cells involved in the process of the eruption and shedding of the teeth.
Describe the composition of enamel.
Differentiate between the macroscopic and microscopic structure of enamel.
Identify all parts of the microscopic structures of enamel.
Understand the process of mineralization.
Discuss the clinical importance of enamel.

Week 10

Describe the composition of dentin.
Identify the macroscopic and microscopic structure of dentin
Classify the various types of dentin and their relevance to healthy tooth.
Compare and contrast root vs. crown dentin found in the tooth.
Discuss the clinical importance of dentin.

Week 11

Define the location, origin and composition of the dental pulp.
Identify the macroscopic and microscopic components of the pulp.

Define the zones of the pulp.
Discuss the functions of the pulp.
Discuss the clinical importance of the pulp.
Define the location, function and composition of cementum.
Identify the macroscopic and microscopic components of cementum.
Discuss the clinical importance of cementum.

Week 12

Describe the formation of the PDL.
Identify the location of the periodontal ligament.
Identify the structures and components of the periodontal ligament.
Differentiate between the periodontal ligament fibers.
Discuss the clinical importance of the periodontal ligament.
Describe the gross structure of bone.
Describe the microscopic structure of bone.
Understand the process of bone formation and resorption.
Describe the alveolar process and identify its macroscopic structures
Discuss the clinical importance of the alveolar process.

Week 13

Describe the gross anatomy of the temporomandibular joint.
Describe the histology of the temporomandibular joint.
Identify the components of the synovial fluid of the TMJ.
Establish the location of the oral mucous membranes and gingiva.
Identify the histological structures of the oral mucous membrane.
Identify the macroscopic and microscopic structures of the gingiva, and gingival sulcus.
Describe the development of the tongue, and correctly define its anatomy.

Week 14

Identify the histology and function of the salivary glands and tonsils.
Know the distribution and location of the salivary glands.
Identify the difference between the major and minor salivary glands.
Discuss the clinical importance of the salivary glands.