Wayne County Community College District

COURSE SYLLABUS

DHY 111 Histology and Oral Embryology

CREDIT HOURS: 3.00

CONTACT HOURS: 45.00

COURSE DESCRIPTION:
Basic principles of histology and embryology are reviewed with emphasis on tissues of the oral cavity and contiguous structures. Histology and embryology encompasses the development of the oral facial complex including the formation of the enamel, dentin and pulp, root formation, the attachment apparatus and the eruption and shedding of teeth.

PREREQUISITES: DHY 101, DHY 110, DHY 120

EXPECTED COMPETENCIES:
Upon completion of this course, the student will be familiar with:

- Name the four basic tissues in the body and give an example of where each type is found.
- List and give the relative size of various subdivisions of the meter down to the angstrom and give the range of human cell sizes.
- Give the function of the following cell parts and organelles.
- Relate the structures of the oral cavity with their description or label:
- Describe normal gingival including its component parts.
- Name the structure that lies under the sublingual fold.
- Discuss why dentin formation can continue throughout life but enamel cannot.
- List and discuss the types of dentin and cementum.
- Describe the functions of cementum.
- State the functions of the pulp.
- Label the parts of the pulp cavity.
- Describe an odontoblast, cementocyte and cemento last.
- Name, identify and locate in the body the various types of epithelia both simple and stratified, and pseudostralified.
- Name, define and give examples of the various epithelial glands.
- Name, describe, compare and locate in the body the various connective tissues.
- Name, describe, compare and locate in the body the various types of cartilage.
- Contrast the cells and neurotronsmittersof the central nervous system to those of the peripheral nervous system.
- Follow a conceptus from the union of the egg and sperm to the late blastocyst stage, naming the tissues the embryonic disc and various mature tissues that are derived from each.
- Give the name and length of the three intrauterine periods of life.
- Follow the maxilla-facial development during the embryonic period.
- List the sequence of specialization of the various cell types and the sequence of formation of the hard tissues of the tooth.
- List in order the 3 stages of tooth development and identify the types of cells on a drawing of a microscopic view.
- Name, give the chemical formula and the percentage of the molecules that make up the inorganic portion of enamel.

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- Identify and describe the following macroscopic features of enamel. Explain the different configuration of smooth-surface vs. pit-and-fissure decay based upon the direction of enamel rods.
- Describe the makeup of dentin, both organic and inorganic, with percentage.
- Describe the following microscopic and submicroscopic features of dentin.
- Explain two theories for the sensation of pain that occurs at the DE junction.
- Compare the relative size of a bacterium to the dentinal tubule.
- Explain the process of cementum formation.
- Describe the makeup of cementum both organic and inorganic, with percentages.
- Explain how cementum formation may be responsible for passive eruption of the tooth.
- Describe cementicles, both free and fused.
- Give the function of the following cells and substances found in the dental pulp.
- Name the parts of the periodontium.
- Give the function of the following cells found in the periodontal ligament:
- Name and identify the various principal fibers of the periodontal ligament.
- Name the types of sensory nerve fibers found in the periodontal ligament.
- Name the various parts of the alveolar process.
- Explain the relationship between alveolar bone and the presence or absence of teeth.
- Identify, locate and give the function of the following structures of the tongue.
- Name and describe the functioning of the serous and mucous secreting cells in the salivary glands.
- Name in order the various intralobular and extralobular ducts associated with the major salivary glands.
- Describe the function of myoepithelial cells in salivary flow.
- Describe the composition of saliva.
- Identify those portions of the oral mucous membrane that are and are not keratinized and differentiate between keratinized and non keratinized.
- Explain the function of the keratinocytes and melanocytes in the oral epithelium.
- Identify and describe the histological composition of the various parts of the palate, lip and alveolar mucosa.
- Describe the relative keratinization of the various parts of gingiva.
- Describe the makeup of the lamina propria of the gingiva.
- List the factors that affect the normal color of the gingiva.
- Identify the different parts of the gingiva and be able to describe their composition.
- Describe the various parts of the temporomandibular joint and explain what makes it unique among joints.
- Name the various tissues that make up the TMJ and its capsule.
- Identify microscopic views of tissues, cells and organisms in both a midterm and comprehensive final practical examination.
- Identify and name the various stages of mitosis and contrast with meosis.
- Identify and name bacteria of various shapes.
- Identify and name the various parts of Haversian systems in bone.

- Identify and name the various parts of a cross section of a decalcified tooth.

- Identify and name a frontal section of a developing tooth in the bell stage and the surrounding structures.
- Identify and label the fungi form, circumvallate and filiform papillae of the tongue.
- Identify and name the various cells and ducts associated with the parotid gland, as well as the glands of von Ebner and other minor salivary glands.

ASSESSMENT METHODS:
Student performance may be assessed by examination, quizzes, case studies, oral conversation, group discussion, oral presentations. The instructor reserves the option to employ one or more of these assessment methods during the course.

GRADING SCALE:
90%-100% = A
80%-89.9%= B
70%-79.9%= C
60%-69.9%= D
<60% = E

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