

Virginia Western Community College

DNH 115

Histology/Head and Neck Anatomy

PREREQUISITES

Admission into the Dental Hygiene Program.

COURSE DESCRIPTION

Presents a study of the microscopic and macroscopic anatomy and physiology of the head, neck and oral tissues. Includes embryologic development and histologic components of the head, neck, teeth, and periodontium.

Semester Credits: 3 Lecture Hours: 3 Lab/Clinical/Internship Hours: 0

REQUIRED MATERIALS

Textbook:

- Illustrated Dental Embryology, Histology, and Anatomy. Bath-Balogh, Mary and Fehrenbach, Margaret J. 5th Edition. ISBN: 978-0-323-61107-7
- Illustrated Anatomy of the Head and Neck. Margaret J. Fehrenbach, Susan W. Herring. 6th Edition. ISBN: 978-0-323-61301-9
- Clinical Practice of the Dental Hygienist. Boyd, Linda D, Mallonee, Lisa F. Wyche, Charlotte J. 13th Edition. ISBN: 978-1496396273
- Dental Anatomy Coloring Book. Fehrenbach, Margaret J. 4th Edition. ISBN: 978-0323-81239-9

COURSE OUTCOMES

At the completion of this course, the student should be able to:

1. Relate the histological components/structures of tissues of the oral cavity to gross anatomical structures
2. Develop insight into the structures of the head and neck relating to surface anatomy and to the underlying supporting tissues
3. Relate embryologic development of the head and neck to normal and abnormal intra and extra- oral clinical findings.
4. Develop a detailed knowledge of the individual micro and macroscopic characteristics and functions of intra-and extra-oral structures of the head and neck
5. Develop a working knowledge of anatomical terminology for both identification and functional purposes. Expect questions in pre-clinic lab
6. Begin to apply knowledge of oral-facial histology and anatomy to pre-clinic level client services
7. Apply and integrate knowledge acquired in this course with other dental hygiene science and clinical courses taught in the curriculum

8. Develop a working knowledge of anatomical terminology for both identification and functional purposes
9. Develop insight into the structures of the head and neck relating to surface anatomy and to the underlying supporting tissues
10. Develop a detailed knowledge of the individual macroscopic characteristics and functions of intra and extra-oral structures of the head and neck
11. Begin to apply knowledge of oral-facial anatomy to pre-clinic level patient services
12. Apply and integrate knowledge acquired in this course with other dental hygiene science and clinical courses taught in the curriculum.

TOPICAL DESCRIPTION

Unit 1 (Histology): Course Introduction, Embryology

- Prenatal Development Periods
- Development from Zygote to Germ Disc
- Understanding the Physiologic Processes
- Embryonic Germ Layers and Body Tissues
- The Significance of the Primitive Streak, Neural Crest and Mesodermal Somites
- Ectomesenchyme and Neural Crest Cells
- Timeframe and Developmental Sequence of the Face, Palate & Tongue
- Structures Derived from the Frontonasal Process
- Branchial Arches and their Derivative Structures
- Developmental Disturbances

Unit 1 (Head/Neck): Surface Anatomy, Skeletal System, Cervical Vertebrae

- Anatomical Nomenclature
- Surface Anatomy
- Regions of the Head
- Regions of the Neck
- Overview of the Skeletal System
- Bones of the Head and Neck
- Abnormalities of Bone

Unit 2 (Histology): Cells and Tissues

- The Cell
- Cell Division
- Extracellular Materials
- Intercellular Junctions
- Basic Tissue
- Epithelium
- Basement Membrane
- Connective Tissue
- Specialized Connective Tissue
- Muscle
- Nerve Tissue

Unit 2 (Head/Neck): Temporomandibular Joint, Mandible, Muscular System

- Overview of the Muscular System
- Muscles of the Head and Neck

- Overview of the Temporomandibular Joint
- Jaw Movements with Muscle Relationships
- Disorders of the Jaw

Unit 3 (Histology): Oral Mucosa, Salivary Glands and Tonsils

- Oral Mucosa
- Regional Differences in Oral Mucosa
- Pigmentation of Oral Mucosa
- Aging and the Skin
- Turnover Time, Repair, and Aging of the Oral Mucosa
- Histology of Salivary Glands
- Secretory Cells and Acini
- Ductal System
- Major Salivary Glands
- Minor Salivary Glands
- Development of Salivary Glands

Unit 3 (Head/Neck): Vascular System, Glandular Tissue

- Overview of the Vascular System
- Arterial Blood Supply to the Head and Neck
- Vascular Lesions
- Overview of the Glandular Tissue
- Lacrimal Glands
- Thyroid Gland
- Parathyroid Glands
- Thymus Glands

Unit 4 (Histology): Gingiva and Periodontium

- Periodontium
- Components of the Periodontium
- Gingival Tissue
- Dentogingival Junctional Tissue
- Enamel
- Cementum
- Periodontal Ligament
- Alveolar Bone

Unit 4 (Head/Neck): Nervous System

- Overview of the Nervous System
- Nerves to the Oral Cavity and Associated Structures
- Nerve Lesions of the Head and Neck

Unit 5 (Histology): Tooth Development

- Tooth Development
- Root Development
- Periodontal Ligament Development
- Alveolar Bone Development
- Apposition of Enamel Matrix
- Maturation of Enamel Matrix
- Microscopic Features of Mature Enamel
- Dentin-Pulp Complex

- Future Concerns with Dentin-Pulp Complex

Unit 5 (Head/Neck): Local Anesthesia, Lymph System, Fascia and Spaces, Spread of Dental Infection

- Overview of Anatomical Considerations for Local Anesthesia
- Maxillary Nerve Anesthesia
- Mandibular Nerve Anesthesia
- Overview of the Lymphatic System
- Lymph Nodes of the Head and Neck
- Lymphadenopathy
- Overview of the Fascia
- Fascial Spaces
- Infectious Process
- Dental Infections
- Infection Resistance Factors
- Spread of Dental Infections
- Prevention of the Spread of Dental Infections