



Jordan University of Science and Technology
Faculty of Medicine
Doctor Of Medicine (Md) Department

MED217A Head And Neck Anatomy

First Semester 2023-2024

Course Catalog

3 Credit Hours. This comprehensive course in Head and Neck Anatomy is constructed specifically for dental students, providing a deep knowledge of the intricate structures of the human head and neck region. Understanding the anatomical complexities of this area is crucial for dental professionals, serving as the foundation for various dental procedures, diagnostics, and patient care.

Text Book

Title	Clinical Anatomy by Regions
Author(s)	Richard S. Snell
Edition	30th Edition
Short Name	Snell
Other Information	

Course References

Short name	Book name	Author(s)	Edition	Other Information
Gray's Anatomy	Gray's Anatomy	Richard L. Drake, A. Wayne Vogl, Adam W. M. Mitchell	29th Edition	

Instructor

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Office Hours	
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Class Schedule & Room

Section 1:

Lecture Time: Wed : 13:00 - 14:30

Room: مدرج الفاروق

Tentative List of Topics Covered

Weeks	Topic	References
Week 1	Skull I - Describe the following structures related bones of the skull: - The cranial vault and base. - Joints between skull bones. - Sutures and radiographic points of the skull. - Bones forming the skull and regions: Bones and cartilages participating in forming the orbit and nasal cavities. Skull II - Describe the followings: Boundaries and content of cranial fossa. - Skull foreman and the structures passing through them. - Parts of the hard palate. - Bony and cartilaginous components of the nose and nasal septum. - The facial skeleton. - The bony orbit. - Triangle of the face. - The structure and functions of paranasal sinuses. - Upper and lower jaws bones.	
Week 2	Cervical Vertebrae & Hyoid Bone - Describe all the following related vertebral column structures: - The primary and secondary curvatures of the vertebral columns. - Structure, parts, and functions of intervertebral discs and ligaments. - The difference between typical and atypical cervical vertebrae. - The structure and functions of atlanto-occipital and atlanto-axial joints. -The hyoid bone including the muscles and ligaments attached to it. Fasciae of The Neck - Describe the covering layers of the neck on cross-section. - The contents of the superficial fascia of the neck (muscle, cutaneous nerves and blood vessels). - The structure and partitions of the deep facial of the neck. - Structure and contents of investing layer, pretracheal, prevertebral fasciae and the carotid sheath.	
Week 3	Muscles of The Neck - Muscle groups of the cervical region including attachments, function and innervation. - Describe the key muscles of the neck with emphasis on the supra-hyoid and infra-hyoid muscles including O, I, and their actions. - Describe Ansa cervicalis. - Muscle groups of cervical vertebral muscles. - Describe the attachments, action and innervation of scalene muscles and the borders and structure passing through scalene hiatus. Anterior Triangle of the Neck - The subdivision and borders of the anterior neck triangle and sub-triangle. - The subdivision and contents of this triangle. - Describe the external carotid artery and its main branches. - Explain the structure and function of the carotid body and carotid sinus. - Describe the vasculature of the thyroid gland.	
Week 4	Posterior Triangle of the Neck - Describe the borders of the posterior triangle of the neck and the muscles forming the floor of this triangle - The subdivision of the posterior triangle, borders and contents of each sub-triangle. - Describe the roots and trunks of the brachial plexus. - The structure and branches arising from the subclavian artery. Radiographic Anatomy of The Head and Neck - Understand the basic physics of X-rays. - Understand the various extraoral head and neck projections and the use of each one. - Understand the various intraoral use of each one in the dental clinic. - Have a general understanding of the CT and MRI imaging techniques.	
Week 5	FIRST EXAM 30% WIEGHT	

Week 6	The Face, Scalp and Meninges - Define the contents of the face region with emphasis on the muscles of facial expression and their function. - The distribution of the terminal branches of facial nerves. - The sensory innervation and blood supply of the face. - Understand the layers, the sensory innervation and blood supply of the scalp. - Describe the cranial meninges with dural reflections and partitions. - Understand the blood supply of dural venous sinuses of the meninges. The Brain I - Describe the followings: -The difference between the central and peripheral nervous systems. - The major parts of the brain and e its main lobes. - The outer and inner structure of the cerebral hemispheres. - The main sulci and gyri of the cerebrum. - The sensory and motor homunculi. - The main functional regions of the cerebrum. - The structure of thalamus and hypo thalamus. - The structure of the midbrain and hindbrain. - Define the brainstem and the cerebellum.	
Week 7	The Brain II - Describe the followings: - The ventricular system of the brain. - The flow of cerebrospinal fluid. - The embryology of the CNS. - The arterial supply of the brain (The internal carotid artery (ICA) and its branches. - Define the parts and pathway of the vertebral artery. - Describe the arterial circle of Willis. The Cranial Nerves I - Describe the cranial nerve including name, roman symbol and type of each cranial nerve (sensory, motor or mixed). - The structure and pathway of the olfactory nerve and optic nerve. - Describe the structure, pathway of the nerves acting on the eyeball (oculomotor, trochlear and abducent nerves). - Understand the structure, pathway and branches of the Trigeminal nerve.	
Week 8	The Cranial Nerves II - Explain the route and branches given by each part of the facial and vestibule-cochlear nerve. - Describe the structure and function of the glossopharyngeal nerve. - Explain the distribution and functions of the vagus nerve. - Understand the origin, pathway and function of the accessory nerve including its cranial and spinal roots. - The muscles supplied by the hypoglossal nerve and action. The Temporal, infratemporal and pterygopalatine fossae - Subdivision and borders and contents of the temporal, infra-temporal and pterygo-palatine regions. - The muscles, ligaments, blood vessels and nerves of the infra-temporal region. - The pathway and branches of the mandibular division of trigeminal nerve (V3). - Describe the structure, function and relationships of the otic ganglion. - Explain the pathway and function of chorda tympani of the facial nerve. - Understand the superior and inferior alveolar branches and how they contribute to the innervation of upper and lower jaw teeth. -	
Week 9	The Oral Cavity and salivary glands - Describe the borders and contents of the oral vestibule and the oral cavity proper. - Identify the oro-pharyngeal isthmus, palate-glossal and palate-pharyngeal arches. - Describe sensory innervation of different components of the oral cavity including the innervation of teeth. - The tongue structure, attachment, innervation and action of its musculature. - Explain the sensory innervation and blood supply of different parts of the tongue. - Describe Waldeyer?s ring of tonsils. - Describe the location, structure, relations for each of the major salivary glands. - Define the structures located inside the parotid gland. - Explain the parasympathetic innervation of the parotid, submandibular and sublingual glands. The Palate and Nasal Cavity. - Describe the hard and soft palate with emphasis on blood supply and sensory innervation of its different parts. - Understand the attachment, action and innervation of muscles of the soft palate and their role in the swallowing	
Week 10	SECOND EXAM 30% WIEGHT	

Week 11	The Larynx - Location and function of the larynx. - Describe cartilaginous framework, membranes and ligaments of the larynx. - Explain the structure of the epiglottis, glosso-epiglottic folds and valleculae. - Describe the laryngeal inlet and the laryngeal cavity. - Define true and false vocal folds. - Understand the attachment, action and innervation for each extrinsic and intrinsic muscle of the larynx. - Explain the blood supply, sensory and motor innervation of different parts of the larynx. - Understand the pathway and function of the external, internal and recurrent laryngeal nerves. The Pharynx - Describe the location and function of the pharynx with emphases on nasopharynx, oropharynx and laryngopharynx. - Understand the circular and longitudinal muscles of the pharynx. - Describe the structure and muscles attached to the pharyngeal raphe and pterygo-mandibular raphe. - Identify different parts of inferior constrictor muscle and define Killian's dehiscence. - Describe the inner structure o	
Week 12	The Temporo-mandibular Joint (TMJ) - Describe the TMJ (joint). - Understand the internal compartments of the TMJ and the articular disc and the extrinsic and intrinsic ligaments. - Describe the movements of the TMJ and connect them with mandibular movements. - Understand the clinical conditions related to the TMJ such as dislocation of the TMJ and displacement of the TMJ disc and how they are managed. The Muscles of Mastication - Define the chief and accessory muscles of mastication. - Explain the parts, attachment, action and innervation for each muscle of mastication and how they are related to different movements of the mandible. - Describe the blood supply for the masticatory muscles. - Revise the maxillary artery.	
Week 13	The Orbit - Describe the structure and contents of the orbital cavity. - Explain the bony component for each wall of the orbital cavity. - Understand the structure and function of the lacrimal apparatus. - Identify the openings of the orbital cavity and the structures passing through each. - Describe the structure, action and innervation of the extraocular muscles. - Explain the pathway and function of the nerves of the orbit including the optic nerve, branches of the ophthalmic nerve, oculomotor, trochlear and abducent nerves. - Mention the branches of the ophthalmic artery. The Eye - Describe the layers of the eyeball. - Describe the structure of different parts of the fibrous coat of the eyeball (cornea & sclera). - Describe the structure of different parts of the vascular coat of the eyeball (choroid, ciliary body and iris). - Describe the structure of different parts of the nervous coat of the eyeball - Understand the structure, action and innervation of the muscles of the iris and how they cont	
Week 14	The Ear - Define the parts of the ear (external, middle and internal ear). - Describe the different parts of the auricle and the external auditory meatus. - Understand the sensory innervation of different parts of the external ear. - Describe the structure, layers, linings and parts of the tympanic membrane. - Understand the structure of the middle ear cavity. - Describe the structure and relationships for each wall of the middle ear cavity. - The contents of the middle ear cavity. - Understand the structure, function and innervation of stapedius and tensor tympani muscles. - Describe the bony and membranous labyrinth of the inner ear. - Explain the process of hearing and equilibrium. The Autonomic Nervous System of The Head and Neck - Understand the concept of sympathetic and parasympathetic nervous systems and the difference between their ganglia. - Describe the superior, middle and inferior cervical ganglia. - Describe the location and structure of the ciliary, otic, pterygopalatine and submandibula	
Week 15	Blood Vessels and Lymphatics of the Head & Neck - Describe the origin and path of the subclavian and common carotid arteries. - Describe the branches arising from each part of the subclavian artery. - Describe the branches arising from the external carotid artery. - Define the parts and branches of the internal carotid artery. - Understand the arterial supply of the brain. - Identify the veins of the head and neck region and their tributaries including the cerebral veins, dural venous sinuses, veins of the face, veins of the scalp and veins of the neck. - Explain the difference between superficial and deep veins of the head and neck region. - Understand the lymphatic drainage and regional lymph nodes of the head and neck region. Embryology of the head and neck (Branchial Arches) - Understand the concept of the pharyngeal arches, pouches and clefts. - Describe the internal structure for each pharyngeal arch including the cartilaginous, nervous, muscular and vascular elements. -Mention the adult derivativ	

Week 16	Revision and Final comprehensive exam 40% WIEGHT	
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Relationship to Program Student Outcomes (Out of 100%)													
PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	PLO7	PLO8	PLO9	PLO10	PLO11	PLO12	PLO13	PLO14

Policy	
Head & Neck Anatomy (for Dental Allied Medical Students)	<p>Understand the basic anatomy of the head and neck region.</p> <ul style="list-style-type: none"> - Identify and describe the major bones, muscles, nerves, and blood vessels of the region. - Explain the structural and functional relationships between different anatomical structures of the head and neck. - Identify and explain the functions of major muscles of facial expression, mastication, larynx, pharynx, palate, and tongue. - Understand the pathways, distribution, and functions of the cranial nerves with emphasis on the facial nerve (VII) and trigeminal nerve (V). - Describe the structure and function of key organs in the head and neck region, including the salivary glands, larynx, pharynx, eye and orbit, and the ear. - Understand the detailed in-depth anatomy of oral cavity as related to dental profession. - Recognize the common clinical conditions related to head and neck anatomy, such as dental issues and temporomandibular joint disorders. - Understand the anatomical basis of various dental procedures and surgeries such as local anesthesia, dental prosthesis, extraction of teeth and other dental procedures. <p>30% First exam Theory online Examination</p> <p>30% Second exam Theory online Examination</p> <p>40% Final Exam Theory online examination</p>

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