

## **SYLLABUS**

COURSE: DHCT 2107 Head and Neck Anatomy  
SEMESTER: Fall  
CREDIT HOUR: 2.0

REVISED: 2002  
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COURSE DIRECTOR: Raymond L. Warner, Ph.D.

## GOAL

The goal of this course is to present to the Dental Hygiene Student the basic concepts and structures of Head and Neck Anatomy. Emphasis is placed on those subjects that are of particular interest to the clinical practice of dental hygiene.

## OBJECTIVES

1. List and define the anatomical terms of location and position.
2. List and describe the fundamental planes of dissection.
3. Identify and locate bones of the skull. Locate the major characteristics on each of the bones of the skull as given on the handout entitled: "Osteology of the Skull"
4. With the use of anatomical terms of location, describe the relationship of one anatomical landmark to another on the skull.
5. Identify the name of the bone with which each of the anatomical landmarks is associated.
6. List the bones involved in the temporomandibular joint.
7. Draw and label the temporomandibular joint including all components.
8. Describe the types of mandibular movements.
9. Define origin and insertion of a muscle.
10. Define tendon.
11. Describe the major characteristics of skeletal muscle tissue.
12. Describe what is meant by graded muscle contraction.
13. Identify the muscles of mastication. For each of the muscles of mastication, indicate its origin, insertion, action, blood and nerve supply.
14. Draw and label the muscles of mastication.
15. Indicate which muscles of mastication are involved in each of the mandibular movements described in objective #8.
16. Identify the major muscles of facial expression. For each of the muscles of facial expression indicate its action, blood and nerve supply.
17. Draw and label the muscles of facial expression.
18. Group the muscles of facial expression as to their location.
19. Identify the suprahyoid and infrahyoid muscles. For each of these muscles, indicate its points of attachment, action, blood and nerve supply.
20. Contrast the action the suprahyoids when the hyoid is fixed as to when it is mobile.
21. Describe the involvement of the hyoid muscles in the movements describe in objective # 8.
22. List the major triangles of the neck and identify the boundaries of each.
23. Draw and label the triangles of the neck.

24. Identify the major structures found within each of the triangles of the neck.
25. List the muscles of the tongue and categorize each muscle as to whether it is intrinsic or extrinsic.
26. Identify the nerve supply to the tongue muscles.
27. For each of the extrinsic muscles, indicate its origin, insertion, and action.
28. Indicate the nerve supply for the special sense of taste.
29. Distinguish between hard palate and soft palate. Identify the underlying structures of each.
30. List the palatal arches and identify the underlying structures of each.
31. Identify the muscles of the soft palate. For each of the muscles of the soft palate, indicate its action and nerve supply.
32. Identify the muscles of the pharynx and categorize each as to whether it is longitudinal or circular. For each of the muscles of the pharynx, indicate its action and nerve supply.
33. Identify the side of the heart that supplies the head and neck regions with blood.
34. Draw and label the aortic arch and its branches.
35. Draw and label the common carotid arteries.
36. List the 8 branches of the external carotid and indicate the areas supplied by each.
37. Draw and label the internal maxillary artery in the detail as given on p. 157 of the text.
38. Indicate the areas supplied by each of the major branches of the internal maxillary artery.
39. Trace blood from the left side of the heart to each of the major oral structures including the individual teeth.
40. Identify the major vein and side of the heart which receives venous drainage from the head and neck structures.
41. Draw and label the internal jugular vein including all of its major tributaries.
42. Trace blood from the pterygoid plexus to the right side of the heart including the names of all major veins through which the blood passes.
43. Identify the two (2) major sets of arteries supplying the brain.
44. List the 4 branches of the internal carotid artery and indicate the area of the brain supplied by each.
45. Draw and label the circle of Willis.
46. Describe the functional significance of the circle of Willis.
47. List the major dural sinuses of the brain and the areas served by each.
48. Describe the composition of a dural sinus.

49. Describe the direction of blood flow through the dural sinuses.
50. List the major lymph nodes of the head and neck region and identify the structures served by each.
51. Draw and label the location of the major lymph nodes of the head and neck.
52. Trace the flow of lymph from each of the lymph nodes to the thoracic cavity.
53. Describe the clinical significance of knowing the location of lymph nodes and the areas served by each.
54. Describe the general organization of the nervous system; including in your answer central nervous system and peripheral nervous system.
55. Draw and label a neuron. Indicate the direction of a nerve impulse along the neuron.
56. Distinguish between cranial nerves and spinal nerves.
57. Distinguish between somatic nerves and autonomic nerves.
58. Distinguish between afferent (sensory) nerves and efferent (motor) nerves.
59. List the twelve pairs of cranial nerves by name and Roman numeral.
60. Identify the cranial foramen through which each cranial nerve passes.
61. Identify the type of nerve (motor, sensory, mixed) that each cranial nerve is.
62. Describe in one or two sentences the general function of each cranial nerve.
63. Draw and label the major branches of the trigeminal nerve in the same detail as given on pp. 200, 204-209 of the text.
64. Identify the structure(s) innervated by each of the major branches of the trigeminal nerve.
65. Draw and label the major branches of the facial nerve in the same detail as given on pp. 210-211 of the text.
66. Identify the structure(s) innervated by each of the major branches of the facial nerve.
67. Identify the structure innervated by each of the major branches of the glossopharyngeal nerve.
68. Identify the cranial nerve and specific branch that innervates each of the major structures found in the oral cavity including the individual teeth.
69. Define anesthesia and describe the general mechanism of anesthesia.
70. Contrast the local infiltration mode of anesthesia to that of block anesthesia.
71. Describe the sites of injection for maxillary and mandibular blocks and list the major nerves involved.
72. List the major hazards in dental anesthesia.

## RESOURCES

### I. Media Resources

#### A. Printed media

Textbook:

Fehrenbach, M.J. and Herring, S.W.  
Illustrated Anatomy of the Head and Neck, 3rd ed.  
W.B. Saunders Co., Philadelphia

#### B. Electronic media

Course material on BlackBoard

### II. Human Resources

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STUDY PLAN AND REQUIREMENTS

**DHCT 2107 HEAD AND NECK ANATOMY  
Fall 2009 Lecture Schedule**

Tuesday and Thursday, 9-9:50 am  
Room B25

<b>DATE</b>	<b>TOPIC</b>	<b>READINGS*</b>
Aug 18 9-9:50 am	Introduction to Anatomy	pp. 1-11, 34-36
Aug 20 9-9:50 am	Skull Osteology I	pp. 36-93
Aug 25 9-9:50 am	Skull Osteology II	
Aug 27 9-9:50 am	TMJ I	pp. 130-140
Sep 1 9-9:50 am	TMJ II	
Sep 3 9-9:50 am	Muscles of Mastication I	pp. 108-112
Sep 8 9-9:50 am	Muscles of Mastication II	
Sep 10 9-9:50 am	<b>EXAM I</b>	<b>Room 132</b>
Sep 15 9-9:50 am	Muscles of Facial Expression I	pp. 97-108
Sep 17 9-9:50 am	Muscles of Facial Expression II	
Sep 22 9-9:50 am	Neck I	pp. 95-97, 112-115
Sep 24 9-9:50 am	Neck II	pp. 24-26
Sep 29 9-9:50 am	Oral Cavity	pp. 115-129
Oct 1 9-9:50 am	Arteries	pp. 141-153

DATE	TOPIC	READINGS
Oct 6 9-9:50 am	Veins	pp. 153-167
Oct 8 9-9:50 am	Cranial Cavity	
Oct 13 9-9:50 am	<b>EXAM II</b>	<b>Room 207</b>
Oct 15 9-9:50 am	Nervous System I: Organization	pp. 182-188
Oct 20 9-9:50 am	Nervous System II	
Oct 22 9-9:50 am	Cranial Nerves I	pp. 188-192
Oct 27 9-9:50 am	Cranial Nerves II	
Oct 29 9-9:50 am	Trigeminal Nerve	pp. 192-205
Nov 3 9-9:50 am	Facial & Glossopharyngeal Nerves I	pp. 205-207
Nov 5 9-9:50 am	<b>EXAM III</b>	<b>Room 207</b>
Nov 10 9-9:50 am	Facial & Glossopharyngeal Nerves II <b>Course Evaluation</b>	
Nov 12 9-9:50 am	Dental Anesthesia	pp. 216-248
Nov 17 9-9:50 am	Lymphatics and Spread of Dental Infection	pp. 249-265
Nov 19 9-9:50 am	Fascial Spaces and the Spread of infection	
Nov 24 9-9:50 am	Review	
Nov 26	<i>Thanksgiving Holiday</i>	
Dec 1-3	<i>No class</i>	
<b>Dec 4 10-10:50 am</b>	<b>EXAM IV</b>	<b>Room 207</b>

\* Readings are from required textbook.

## EVALUATION METHODS

There will be four (4) examinations given during this course. Exams 1 and 2 will be 100 points in value. Exams 3 and 4 will be worth 50 points each. Each exam will cover a specific block of material as presented in the "Lecture Schedule". The examinations will consist of multiple-choice, matching, and short answer. Sample examinations will be available on Blackboard.