

## COURSE OUTLINE & SYLLABUS

COURSE TITLE: Head & Neck Anatomy

COURSE NUMBER:

COURSE CREDITS: 3

TYPE OF COURSE: **Occupational Preparatory**

LENGTH OF COURSE: **11 Weeks**

COURSE PRE-REQUISITES:

COURSE DESCRIPTION: Didactic and laboratory/practice sessions teaching anatomy and function of the head and neck. Draws on concepts taught in general anatomy and physiology classes, DHY 101 and DHY 105. **Use of computers integrated into course**

### COURSE LEARNING OUTCOMES/COMPETENCIES

A proficient student will:

- 1) Identify the anatomical landmarks of the face and oral cavity.
  - a) accurately identifies all oral structures, their location and discusses their clinical significance, including:
    - face: nasolabial groove, vermilion zone, labiomental groove, philtrum, labial tubercle, labial commissures
    - vestibule: canine eminence, buccal frena, labial frena, mucobuccal/mucolabial fold, parotid papilla
    - oral cavity: retromolar pad, soft palate, hard palate, uvula, palantine fovea, pterygomandibular raphe, maxillary tuberosity, palantine raphe, rugae, palantine tonsils (or that area if tonsils are not present), palatoglossal arch, palatopharyngeal arch, incisive papilla, oropharynx
    - floor of mouth/ventral surface of tongue: sublingual fold, sublingual caruncle, lingual frenum, plica fimbriata, lingual vein
- 2) Identify the origin, insertion and action of all muscles associated with the head and neck.
  - a) accurately identify the origins and insertions of the following muscle groups:
    - muscles of mastication
    - muscles of facial expression
    - muscles associated with the palate, pharynx, and larynx
    - muscles associated with the hyoid
    - muscles (intrinsic and extrinsic) of the tongue
    - muscles of the neck, including the sternocleidomastoid
  - b) accurately identifies the actions of each of the following muscle groups:
    - muscles of mastication
    - muscles of facial expression

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- muscles associated with the palate, pharynx, and larynx
- muscles associated with the hyoid
- muscles (intrinsic and extrinsic) of the tongue
- muscles of the neck, including the sternocleidomastoid

- c) accurately identifies the functions of each of the following muscle groups:
- muscles of mastication
  - muscles of facial expression
  - muscles associated with the palate, pharynx, and larynx
  - muscles associated with the hyoid
  - muscles (intrinsic and extrinsic) of the tongue
  - muscles of the neck, including the sternocleidomastoid

- 3) Describe the anatomy & physiology of the oral structures relating to the skeletal, lymphatic, circulatory and nervous systems.

I) Skeletal:

- a) using a human skull and human skull models, accurately identify the following structures and its associated physiology:
- anterior, posterior, lateral and inferior aspects of bones of the skull
  - describe the mandible, its components, orientation and major landmarks
  - describe the maxilla, its components, orientation and major landmarks
- b) accurately differentiate the bones of the neurocranium and viscerocranium, and what structures these bones form
- c) using radiographs, identify the following skeletal structures:
- sinuses, condyles, foramina, tuberosities, processes

II) Lymphatic:

- a) identify and describe the major lymph nodes of the head and neck
- b) diagram and label the major groups of lymph nodes that drain the teeth and the oral cavity:
- name the primary lymph drainage of all teeth
  - explain the clinical significance of a palpable, swollen node
  - define Ludwig's angina
- c) identify and describe the pattern of drainage of the lymphatics of the head and neck
- d) discuss the function of the lymphatic system

III) Circulatory:

- a) using a diagram of the skull, draw in the branches of the external and internal carotid arteries
- b) accurately identifies and diagrams all branches of the external carotid arteries and the areas supplied by each
- c) accurately identifies and diagrams the branches of the lingual artery, facial artery, and the maxillary artery, and the areas supplied by each
- d) using a diagram of the skull, draw in the jugular veins
- e) accurately identifies all veins associated with the head and neck and the areas drained by each of the veins
- f) define hematoma
- g) accurately describe all the structures supplied by each artery (and drained by each vein)

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- h) accurately describe what could occur when giving local anesthesia, and its significance, in relationship to learning the anatomy of the circulatory system for the head and neck
- i) explain the significance of the pterygoid plexus of veins in relationship to the posterior superior alveolar injection
- j) using a skull model, accurately display the location of all described major arteries and veins

## IV) Nervous:

- a) identify the twelve cranial nerves and their functions
  - b) identify the specific nerve that innervates the pulp, buccal and lingual gingiva of each tooth, given that a clinical procedure might require the use of local anesthesia
  - c) diagram the course of the ophthalmic, maxillary and mandibular divisions of the trigeminal nerve (Cranial V)
  - d) diagram the course of the facial nerve (Cranial VII) and its divisions
  - e) accurately describe the physiology of the nervous system including:
    - CNS, PNS
    - Peripheral Nervous system-the spinal nerves, ANS, cranial nerves
  - f) accurately identifies all cranial nerves associated with the head, neck and oral cavity
  - g) accurately describe the significance and relationship between knowledge of the dental oral structures and local anesthesia
- 4) Describe the structure and function of the tempromandibular joint.
- a) accurately identifies the structures associated with the tempromandibular joint (TMJ) and their significance:
    - articular condyle, articular disc, glenoid fossa, tempromandibular space, condylodiscal space
  - b) construct a cross sectional drawing of the TMJ
  - c) describe the forces of occlusion and their significance in relationship to the joint
  - d) accurately describes the two movements of the TMJ
  - e) identifies probable causes of TMJ pain
    - discuss creptius, subluxation, and bruxism
    - discuss the following terms in their relationship to the TMJ:
      - synovial membrane, synovial fluid, ephyseal plate, fibrocartilage, bilateral diarthrosis, crepitus, popping, cracking, grinding
  - f) define the role of the synovial cavity
- 5) Describe the structure and function of the salivary glands.
- a) identifies the components and function of saliva
  - b) identifies the three major salivary glands and the following:
    - amount of saliva each produces
    - the size of each gland
    - the location of each gland
    - the name/location of each duct which drains each gland
    - the type of secretion each gland has
  - c) identifies the following groups of minor salivary glands:
    - labial, buccal, glossal palatine, palatine, lingual, retromolar

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- d) identifies the cell types & terminology associated with the salivary glands and duct systems:
  - serous, mucous, canaliculi, myoepithelial, intercalated ducts, striated ducts, terminal excretory ducts
- e) identify the following:
  - parenchyma, lobes, lobules, exocytosis, sialolithidentify the innervation of the salivary glands and the response (sympathetic or parasympathetic)

## PROGRAM LEARNING OUTCOMES ADDRESSED IN COURSE

### Program Learning Outcomes

1. Personal Qualities/Values
  - Ability to take the initiative and/or take personal responsibility for one's own actions and follow through on duties
2. Critical Thinking and Problem Solving
  - Able to apply critical thinking skills when problem solving and analyzing patient care needs. **(ADA 2-27)**
3. Communication
  - Able to read, comprehend, evaluate and extrapolate on technical material from documents, i.e., professional journals and current scientific literature **(ADA 2-26)**
5. Application of Sciences/Social and Behavioral Science Foundations and Principles
  - Apply basic sciences/social and behavioral sciences theories and concepts to: 1) taking and developing X-rays, using standard and digital equipment, 2) protecting the patient, 3) accurately reading X-rays **(ADA 2-20)**
  - Able to transfer academic/foundational skills and knowledge to higher level requirements for academic advancement on the dental occupation career ladder without backtracking **(ADA 2-25)**
6. Workplace Skills
  - Ability to work with others and as a member of a team or as a team leader.
  - Ability to take direction
  - Able to learn and process new information and apply it to the working/clinical situation
8. Computer Literacy
  - Able to utilize the computer as a primary tool to: create documents using generic and/or specialized software packages; correctly use digital equipment; search, retrieve, record, send and receive data, web-based material and other information, i.e., inter-library resources; navigate/use the Internet, especially to read or access Web-based or other electronic/digital professional and scientific resources to carry out assigned research, and/or search and retrieve scientific, professional or technical information **(ADA 2-26)**

### Curriculum Threads:

2=Critical Thinking

7=Teamwork/communication

9=Technology/computer literacy

### TOPICAL (MODULES) OUTLINE

(list modules by week presented or in sequential order)

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Topic:

- Week 1: An Overview- Holistic Approaches to Learning Head & Neck Anatomy & Anatomical Landmarks
- Week 2: The Skull- a hands on learning approach (students will each have their own anatomical skull and "build" on it each week)
- Week 3: Muscles of Mastication
- Week 4: Muscles of Facial Expression
- Week 5: Muscles of Tongue, Soft palate, larynx, pharynx, hyoids, sternocleidomastoid
- Week 6: Head & Neck-Circulation
- Week 7: Head & Neck-Lymphatics
- Week 8: Head & Neck-Nervous
- Week 9: Salivary Glands
- Week 10: TMJ
- Week 11: "Pulling it all together"- integration of information and its importance relating to the practice of dentistry & dental hygiene while providing oral care

## MAJOR LEARNING ACTIVITIES

Seminar, Laboratory, Practice, Small group activities, Project (skull project, which runs through the entire semester), Computer

ASSESSMENT (how learner is to be evaluated, i.e., examination, thesis paper, etc.)

Skull project, computer assessment with anatomy software, anatomical landmarks checklist

TEXTS TBD

COURSE PREPARED BY: Jodi Olmsted

DATE: Fall, 2004

## General Policies Pertaining to all Dental Hygiene Program Courses:

### Handicapping Conditions:

It is the learners' responsibility to inform the instructor if they have a handicapping condition that requires reasonable academic adjustments. These adjustments are defined as modifications/adaptations, which will afford them equal opportunity to achieve equal results as those without a handicap. (Rehabilitation Act of 1973: Section 504, PL 92-112, Subpart E, Section 84.43m, 84.44)

If you feel you may need an accommodation or special services for this class, please see me so we can arrange them.

### Equal Opportunity:

..... is an Equal Opportunity Educator and Employer.

### Academic Integrity:

All learners are expected to pursue the highest standards of academic excellence and integrity.

A learner's responsibilities include:

1. a duty to respect the efforts of others by submitting his or her own work;
2. a duty to acknowledge properly the efforts of others;
3. a duty to treat others with respect and dignity;
4. a duty to safeguard and respect the property and rights of others; and
5. a duty to preserve the quality and safety of academic facilities.

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You must accept the responsibility to be honest and meet accepted ethical standards in completing your academic assignments and requirements. All forms of academic misconduct violate academic integrity. It is not possible to list definitively every type of academic misconduct. Conduct by which a learner: misrepresents his or her academic competence, impedes or interferes with another learners opportunity to be judged fairly, or wrongfully obtains, possesses or uses academic materials is considered unethical.

All faculty and learners of ..... are expected to maintain and promote the highest standards of personal honesty and professional integrity. These standards apply to examinations, assigned papers and projects and the preparation of the thesis/project. Learners who cheat ( are fraudulent, deceptive or dishonest in the completion of work or willingly help others to be so or plagiarize (present the work of others as their own) are subject to the following sanctions:

First infraction: The learner will receive a grade of "F" for the work constituting the violation.

Second infraction: The learner will be suspended for one academic term.

Third infraction: The learner will be expelled from .....

A non-transferable record of all student infractions involving cheating and/or plagiarism shall be kept by the Program Director and removed upon graduation.

## Grading:

At the end of each course, grades shall be assigned to all students, except those registered with audit status. All courses are performance (competency) based, rather than a course-based program.

The dental hygiene grading scale is used for this and all courses. The instructor expects that all criteria will be met according to this grading scale for all course assigned work. Course progression for clinical courses will require passage with skill development at higher levels. See individual clinical syllabi for course minimal passing scores. Any grades below a C (75%), are not passing, according to dental hygiene program criteria.

### Grading Scale:

100-95	A
94-92	A-
91-90	B+
89-87	B
86-84	B-
83-80	C+
79-75	C
74-70	D
69-below	F

### Dental Hygiene Program Academic Grading Scale:

## Incompletes:

An incomplete is an exceptional designation granted only when a learner cannot complete all requirements of a course due to unusual circumstances. It is not automatically given.

Incompletes are issued at the discretion of the instructor and are generally granted only if the learner has completed a majority of the coursework with a passing grade.

The request for an incomplete must be made in writing prior to the scheduled date for the final examination (of the last scheduled class meeting if these is no final examination in the course).

The decision to grant or deny the request is made by the instructor based in the reasons presented.

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When only a final examination/assignment is missed because of circumstances that arise unexpectedly, the request for the incomplete designation must be made within twenty-four (24) hours after the scheduled final examination/assignment time.

Provisions for the removal of the incomplete are individually arranged with the instructor granting the incomplete at the time the request is approved. If the usual time allotted for removal of the incomplete has elapsed, a grade will be issued based on the work completed by the learner. A fee is charged for the removal of an incomplete.

## **Performance Based Instruction:**

You, as a learner, are the most important part of instruction. In performance-based instruction, we carefully identify what you need to be able to do as a result of an instructional experience. Next we determine how you can show that you have learned these skills. Finally, we plan learning activities that will help you develop the skills.

Performance-based instruction has many advantages for you:

- 1) What you will learn is based on the skills you will need, rather than on outlines of information.
- 2) You can plan how to invest your time and energy. To help you do that, we tell you right up front WHAT you will learn, how we expect you to show WHEN you have learned, and HOW you may go about learning.
- 3) You know the standards for evaluation before the performance test. You earn a grade according to how well you perform the skills rather than according to how well others in the class perform. You are not graded on a curve.
- 4) You are actively involved in the learning. We design learning activities and assignments that teach you to solve problems and to learn on your own.