	ADED 110C: Dental Assisting Science I
	Hours: Lecture - 3, Lab - 0, Credits - 3
	Prerequisite: none
	Term & Dates: Fall 2020
	Faculty: Kelly O'Brien, CDA, RDH, MEd
	Faculty Accessibility: available via discussion board and email, virtual conferences by appointment
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DRAFT Course Outline – official syllabus will be available in August

Course Description

A study of the anatomy of the head, emphasizing the osteological landmarks and the structures of the oral cavity. Both the permanent and primary dentitions are studied, including embryonic development and eruption patterns. In addition, an introduction to the structure and function of the human body systems in health and disease will be presented.

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Learning Outcomes

Educated Person Statement of Philosophy

Upon completion of this course, students will be able to:

- Pronounce, spell, and define key terminology required to function within the profession.
- Identify any tooth on the oral cavity by name, number, location, function and shorthand terms.
- Discuss the development of the head and neck from conception through adulthood with a focus on the oral cavity.
- Describe the major systems of the body, their functions, and relationship to oral health.

Acquired Knowledge and Skills:

- List the classifications and function of each of the teeth.
- Identify the different tissues of the teeth and oral cavity.
- Identify the arrangement of the dentitions by arch, quadrant, and sextant.
- Label the surfaces of any tooth, and the divisions into thirds of the root and the crown.

- Describe the dentitions using eruption and shedding dates.
- Provide the shorthand identification of each tooth using Palmer, FDI, and Universal.
- Define contour, line angles, and point angles as the terms relate to tooth shape.
- Recognize overbite, overjet, cross-bite, open bite, and occlusion variations.
- Relate a facial profile to a potential occlusion classification.
- Label the parts of the gingival unit and attachment unit.
- Name the three types of oral mucosa and discuss the density of each in relationship to where it is found and its function.
- Locate the various canals, fossa, foramina, and bones in the skull.
- Label the noteworthy landmarks of the face and oral cavity.
- Provide a timeline for the development of the head and neck from embryonic structures to full development of the oral cavity.
- Define the stages of tooth development.
- Describe the structure of the temporomandibular joint and the symptoms of dysfunction.
- Identify healthy and diseased oral tissue by color, shape, size, texture, and response to stimulus.
- List the major systems in the human body, their functions, and major parts of each system.
- Discuss the impact each of the body systems has on dental health.

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Course Materials and Resources

Textbooks, Required

Bird, D.L. & Robinson, D.S. (2021). Modern Dental Assisting (13th Ed.). St. Louis, MO: Elsevier.

Allied Dental Education Department Dental Assisting Student Manual (2020-2021). NHTI, Concord's Community College.

Materials Required

none

Software Required

Secure Testing Software (Specific program TBD. Possible additional fee.)

***NOTE: The software does not work on phones, Chromebooks, tablets. A computer with a full operating system (Windows preferred) is needed. A webcam is also required.

Resources Suggested

none


Textbooks, materials, and software are available online at [eFollet](#) unless specified by your instructor.

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Canvas Orientation

If this is your first time using Canvas at CCSNH, please complete the [Canvas student orientation](#). This orientation offers the opportunity to familiarize you with navigating and using Canvas.

Available Technical Support

If you need help navigating this course, explore the Canvas [Student Guide](#). The Student Guide, Chat, and Phone offer helpful information and are always found by clicking on the  help button on the bottom-right side of every page in Canvas.

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Instructional Approach

Instructional methods may include lecture, PowerPoint presentations, individual assignments, self-study, group discussion, role-play, case studies, collaborative learning groups, video presentations, internet resources, visual aids, and computer software instruction.

Critical Thinking Skills and Activities

Higher education requires critical thinking skills. Critical thinking skills are defined as applying theories or concepts to practical problems or new situations; analyzing the basic elements of an idea, experience, or theory; making judgments about the value or soundness of information, arguments, or methods; and synthesizing and organizing ideas and information in new ways.

The lecture, assignments and testing formats in this course will require students to apply critical thinking and problems-solving skills. Students will be required to retain and apply the information learned in the course into the clinical experience with patients. The critical thinking case-based questions foster evidence-based decision-making and an appreciation for the assimilation and application between the classroom and the clinical setting.

Examples of critical thinking activities for this course include a body system project that relates a major body system to oral health and the design of a tooth eruption project that is concise and informative.

Assessment of Learning

Assignments/Assessments

- Discussion Posts w/ grading rubric
- 3 Quizzes
- 4 Exams
- Eruption Project w/ grading rubric
- Body System Project w/ grading rubric
- Final Exam

Grading Criteria and Grade Calculation

Category	% of Final Course Grade
Discussion Posts & Quizzes	20%
Exams	40%
Eruption Project	10%
Body System Project	15%
Final Exam	15%
Total	100%

Grading Schema	
A	93-100
A-	90-92
B+	87-89
B	83-86
B-	80-82
C+	77-79
C	73-76
C-	70-72
F	69 and below

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Course Schedule

This syllabus is to be used as a guide; it contains information about the course, how it will be taught, what will be required of students and assessment methods that will be used. All information is subject to change at any time.

Dates	Topics	Activities / Assignments	Assignment Due Dates TBD
Week 1	<ul style="list-style-type: none"> Syllabus & Course Introduction Overview of the Dentitions Longhand Tooth Identification & Universal Shorthand System 	<ul style="list-style-type: none"> Read syllabus Watch welcome video Read Chapter 11 View PowerPoints & Lecture Notes Quadrants & Sextants Worksheet Cube Activity Tooth Labeling Worksheet 	<ul style="list-style-type: none"> Introduction video Discussion post & replies
Week 2	<ul style="list-style-type: none"> Anatomy of a Tooth 	<ul style="list-style-type: none"> Read Chapter 8 View PowerPoint & Lecture Notes Components of a Tooth Game Tooth Numbering Game 	<ul style="list-style-type: none"> Discussion post & replies QUIZ on Longhand Tooth Identification and Universal Shorthand System
Week 3	<ul style="list-style-type: none"> Anatomic Features Tooth Morphology 	<ul style="list-style-type: none"> Read Chapter 12 View PowerPoint & Lecture Notes BoneBox Permanent Tooth Morphology Chart 	<ul style="list-style-type: none"> Discussion post & replies Formative Course Survey
Week 4	<ul style="list-style-type: none"> Facial and Tooth Development Eruption and Exfoliation Primary vs Permanent Dentition 	<ul style="list-style-type: none"> View PowerPoint & Lecture Notes Development Timeline View Rubric for Eruption Project 	<ul style="list-style-type: none"> Discussion post & replies EXAM #1 (weeks 1-3)
Week 5	<ul style="list-style-type: none"> Oral Mucosa and Periodontium Landmarks of the Face & Oral Cavity 	<ul style="list-style-type: none"> Read Chapter 10 View PowerPoint & Lecture Notes Oral Structures Labeling 	<ul style="list-style-type: none"> Discussion post & replies
Week 6	<ul style="list-style-type: none"> Occlusion and Malocclusion Palmer and ISO/FDI Shorthand Systems 	<ul style="list-style-type: none"> View PowerPoints & Lecture Notes Dentalcare.com assignment Numbering Systems Study Guide 	<ul style="list-style-type: none"> Discussion post & replies Eruption Project DUE
Week 7	<ul style="list-style-type: none"> Bones and Landmarks of the Skull Temporomandibular Joint 	<ul style="list-style-type: none"> Read Chapter 9 Watch Bones Videos View PowerPoints TMJ Animation Video Skull Bones Labeling 	<ul style="list-style-type: none"> Discussion post & replies EXAM #2 (weeks 4-6)
Week 8	<ul style="list-style-type: none"> Muscles of the Head and Neck Salivary Glands 	<ul style="list-style-type: none"> View PowerPoints Muscle Labeling 	<ul style="list-style-type: none"> Discussion post & replies QUIZ on All Tooth Numbering Systems

Week 9	<ul style="list-style-type: none"> Blood Supply to the Head and Neck Nerves of the Head and Neck Lymph Nodes & Sinuses 	<ul style="list-style-type: none"> View PowerPoint Nerves Diagram 	<ul style="list-style-type: none"> Discussion post & replies
Week 10	<ul style="list-style-type: none"> General Anatomy Structural Units of Organs and Tissues 	<ul style="list-style-type: none"> Read Chapter 6 View PowerPoint Relative Position Practice Cells & Organization Game Rubric for Body System Project Assignment of Systems Plan & organize for project 	<ul style="list-style-type: none"> Discussion post & replies EXAM #3 (weeks 7-9)
Week 11	<ul style="list-style-type: none"> Project Work 	<ul style="list-style-type: none"> Research body system Develop visual presentation and study notes Create oral presentation video 	<ul style="list-style-type: none"> Discussion post & replies QUIZ on Longhand Tooth Identification and Universal Shorthand System
Week 12	<ul style="list-style-type: none"> Body Systems 	<ul style="list-style-type: none"> Watch body system presentations Body Systems Summary Sheet 	<ul style="list-style-type: none"> Body System Project DUE Discussion post & replies
Week 13	<ul style="list-style-type: none"> Body Systems Continued 	<ul style="list-style-type: none"> Watch body system presentations Body Systems Summary Sheet 	<ul style="list-style-type: none"> Discussion post & replies
Week 14	<ul style="list-style-type: none"> Review Highlights of Body Systems 	<ul style="list-style-type: none"> Read Chapter 7 View PowerPoint Body Systems Graphic Organizer 	<ul style="list-style-type: none"> Discussion post & replies Exam #4 (weeks 10-14)
Week 15	<ul style="list-style-type: none"> Review for Final Exam 	<ul style="list-style-type: none"> Compose twenty questions from notes and reading assignments that might be useful on the final exam Virtual class meeting & review for final (optional) 	<ul style="list-style-type: none"> Discussion post & replies
Week 16	<ul style="list-style-type: none"> Wrap Up 	<ul style="list-style-type: none"> Watch final thoughts video Course evaluation 	<ul style="list-style-type: none"> Discussion post (no replies) Final Exam (cumulative)

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Specific Instructional Objectives

Overview of the Dentitions

1. Discuss the overall importance of our teeth.
2. Name the three dentition periods and explain the differences between them.
3. Name the two dental arches and explain two ways that the arches can be divided.
4. State which teeth are anterior and which teeth are posterior.
5. Name and describe the 4 different types of teeth and give the function of each.
6. Identify and label the 5 surfaces of the teeth.
7. Explain the concepts of angles and division of teeth.
8. Define the following terms: Dental Anatomy, Anterior, Line Angle, Oral Embryology, Posterior, Point Angle, Oral Histology, Quadrant, Masticatory, Tooth Morphology, Sextant, Maxillary, Dentition, Midline, Mandibular, Deciduous, Long Axis, Proximal Surface, Succedaneous, Crown, Root, Cervix/CEJ, Apex

Tooth Identification & Numbering Systems

1. State the correct order of terms for the longhand name of each tooth.
2. Name any tooth using the correct order of terms.
3. Label each tooth by number or letter using the Universal shorthand system.
4. Identify any tooth when given the code from the Universal system.
5. Identify each tooth using the Palmer Notation system.
6. Identify each tooth using the ISO/FDI system.
7. Name any tooth when given the code (number) from any of the three numbering systems.

Anatomy of a Tooth

1. Identify the anatomic parts of a tooth.
2. Differentiate between a bifurcated and trifurcated root.
3. Identify which teeth have greater curvature of the cemento-enamel junction and discuss
4. the reason for the greater curvature in those teeth.
5. Identify the 4 major tissues of a tooth.
6. Describe the composition, characteristics, and functions of the 4 major tissues of a tooth.
7. Identify which hard tissues of a tooth have the capability of growth after maturity.
8. List and describe the 3 types of dentin.
9. Describe the changes that occur with age within the pulp chamber, pulp canal, and apical
10. foramen and explain the reason for the changes.
11. Define the following terms: Apical, Periapical, Enamel rods, Dentinal tubules, Pulp chamber, Pulp horns, Pulp canal, Pulp cavity, Apical foramen, Ameloblasts, Cementoblasts, Odontoblasts

Anatomic Features & Tooth Morphology

1. Discuss the importance of facial and lingual contours of teeth and what happens with over
1. contoured and under contoured teeth.
2. Discuss the self-cleaning qualities of teeth.
3. Identify and describe: Contours, Contacts, Embrasures.
4. Define and identify the impact these following situations have on the teeth and gingiva: Open contact, Rough margin, Overhanging restorations.
5. Explain the geometric concept of crown outlines.
6. State the number of cusps/edges and roots of each permanent tooth.

7. Describe the identifying features of each permanent tooth.
8. Compare and contrast all of the characteristics of the permanent teeth.
9. Describe anomalies that occur in the permanent dentition.
10. Define edentulous and partially edentulous.
11. Define the following terms which describe the various anatomical landmarks of the teeth: Cingulum, Mamelon, Contact Area, Cusp, Ridge, Embrasure, Cusp of Carabelli, Marginal ridge, Interproximal Space, Lobe, Oblique ridge, Incisal edge, Fossa, Triangular ridge, Pit, Lingual fossa, Transverse ridge, Fissure, Groove

Development & Eruption

1. Describe the 3 periods of prenatal development.
2. Describe the importance of the first branchial arch.
3. Describe the development of the face and oral cavity.
4. Describe the process of palate formation, including the primary and secondary palates and fusion of them.
5. Describe how a cleft lip and palate occur, and give the prenatal age in which they are likely to occur.
6. State the prenatal ages at which the primary and permanent dentitions begin.
7. Give examples of genetic and environmental factors which affect dental development.
8. Describe the 3 developmental periods of the tooth.
9. Explain the 3 stages of the growth period.
10. Describe the 3 phases of active tooth eruption.
11. Describe passive tooth eruption.
12. State the 3 general rules of eruption.
13. List the eruption sequence of the primary dentition.
14. Discuss the importance of primary teeth.
15. Define primate spaces and give their significance.
16. Define exfoliation and describe how it occurs.
17. Define osteoclasts, resorption, and ankylosis.
18. Define 3 ways in which a primary tooth may be retained.
19. List the eruption sequence of the permanent dentition.
20. State the relationship between the exfoliation dates of the primary dentition and the eruption dates of the permanent dentition.
21. Compare and contrast the primary and the permanent dentitions.

Oral Mucosa & Periodontium

1. Define oral mucosa and describe the 3 types of mucosa by giving an example of each.
2. Define periodontium and name the 2 divisions of the periodontium.
3. Describe the gingival unit and the attachment unit and give the parts and functions of each.
4. List characteristics of healthy gingiva.
5. Describe gingival recession and periodontal pockets.
6. Define the following terms: Free gingiva, Gingival sulcus, Gingival margin, Free gingival groove, Attached gingiva, Mucogingival junction, Interdental papilla, Alveolar mucosa, Alveolar process, Alveolus, Lamina dura, Trabecular bone, Alveolar crest

Landmarks of the Face & Oral Cavity

1. Discuss the significance of the knowledge of normal oral cavities.
2. Identify the 2 divisions of the oral cavity and state the borders of each.
3. Locate and describe the functions of the taste buds.

4. Name and identify the following structures of the face and oral cavity: Labial commissure, Philtrum, Vermillion zone, Labial frenum, Buccal frenum, Maxillary tuberosity, Retromolar pad, Hard palate, Soft palate, Palatine torus, Incisive papilla, Palatine raphe, Palatine rugae, Uvula, Palatine tonsils, Dorsum of tongue, Lingual frenum, Sublingual caruncles, Sublingual fold, Lingual tonsil, Mandibular tori, Outer and inner canthus of the eye, Ala of the nose, Tragus of the ear, Mental protuberance, Angle of the mandible, Zygomatic arch

Occlusion & Malocclusion

1. Define the following terms: Occlusion, Retrusion, Normal Occlusion, Protrusion, Malocclusion, Alignment, Centric occlusion, Lateral excursion, Centric relation, Antagonists
2. Describe the following occlusal deviations: Openbite, Labioversion, Overbite, Buccoversion, Overjet, Linguoversion, Crossbite, Infraversion, Edge-to-edge bite, Supraversion, End-to-end bite, Torsoversion
3. List and describe the 3 types of facial profiles.
4. Describe Angle's 3 classifications of occlusion (be sure to give the facial profile for each).
5. List various causes of malocclusion.
6. Discuss the results of the lack of primate spaces and the premature loss of primary teeth.
7. Define premature contact and discuss what might occur as a result of premature contact of teeth.

Bones & Landmarks of the Skull

1. Identify the regions of the head
2. Locate and identify the bones of the skull including the cranium, face, and hyoid bone
3. Discuss the postnatal development of the skull
4. Differentiate between the male and female skull
5. Define the following terms: anterior fontanelle, alveolar process, condyle, coronal suture, cranium, crista galli, external auditory meatus, foramen magnum, frontal, frontal process, glenoid fossa, hamulus, hyoid, incisive foramen, infraorbital foramen, lacrimal, lambdoid suture, mastoid process, greater palatine foramen, mental, mental protuberance, mental foramen, nasal, nasal conchae, occipital, parietal, pterygoid process, sagittal suture, sphenoid, styloid process, symphysis menti, temporal, temporal process, zygomatic, zygomatic arch, zygomatic process

Temporomandibular Joint

1. Identify the components of the temporomandibular joint.
2. Describe the action and movement of the temporomandibular joint.
3. Describe the symptoms of temporomandibular joint disorders.
4. Explain the causes of temporomandibular joint disorders.
5. Describe the treatments for temporomandibular joint disorders.

Muscles of the Head & Neck

1. Describe the importance of muscles
2. Explain how muscles work
3. Locate and identify the major muscles of the head and neck, including muscles of: the neck facial expression, mastication, the floor of the mouth, the tongue, the palate

Salivary Glands

1. State the functions of saliva
2. Name and describe the 3 large paired salivary glands and their associated ducts

3. Describe common disorders of the salivary glands

Nerves of the Head & Neck

1. Identify and locate the nerves of the head and neck, including the following:
 - a. Name the twelve cranial nerves.
 - b. Name the maxillary and mandibular divisions of the trigeminal nerve.
2. List the teeth for which the following nerves supply sensation and give the injection site for each nerve: Anterior superior alveolar nerve, Middle superior alveolar nerve, Posterior superior alveolar nerve, Inferior alveolar nerve, Mental nerve, Incisive nerve
3. Describe a mandibular block and a mental block.

Blood Supply, Lymph Nodes, & Sinuses

1. Identify and trace the routes of the blood vessels of the head and neck.
2. Discuss the importance of lymph nodes, including the following:
 - a. Explain the structure and function of lymph nodes.
 - b. Identify the locations of the lymph nodes of the head and neck.
 - c. Identify the locations of major lymph node sites of the body.
 - d. Discuss the importance of lymph nodes and the lymph system in dentistry.
3. Identify the paranasal sinuses and explain their function.

General Anatomy & Structural Units

1. Identify the planes and associated body directions used to divide the human body
2. Identify the major body cavities and their components
3. Name and locate the two reference regions of the body and identify the structures in each region
4. Identify and describe the four levels of organization in the human body, including the following:
 - a. Describe the components of a cell
 - b. Explain differentiation of cells
 - c. Describe the different types of stem cells
 - d. Identify and describe the four types of tissue in the human body
 - e. Explain the difference between an organ and a body system

Body Systems

1. Define anatomy and physiology
2. Explain why understanding anatomy and physiology is important to the dental assistant
3. Locate the eleven body systems
4. Explain the purpose, components, and functions of each body system
5. Describe the signs and symptoms of common body system disorders
6. Explain the relationship between systems of the body and the oral cavity

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