



ILLINOIS VALLEY COMMUNITY COLLEGE

COURSE OUTLINE

DIVISION: Workforce Development

COURSE: DLA 1200 Dental Science I

Date: Fall 2020

Credit Hours: 1

Prerequisite(s): Acceptance into the Dental Assisting Program

Delivery Method: **Lecture** **1 Contact Hours (1 contact = 1 credit hour)**
 Seminar **0 Contact Hours (1 contact = 1 credit hour)**
 Lab **0 Contact Hours (2-3 contact = 1 credit hour)**
 Clinical **0 Contact Hours (3 contact = 1 credit hour)**
 Online
 Blended

Offered: **Fall** **Spring** **Summer**

CATALOG DESCRIPTION:

This 8-week course will familiarize students with the foundations of anatomical terminology and the basic dental structures, nomenclature, structures of the oral cavity, information about the tooth and its surrounding structures, tooth identification systems, and an in-depth study of the different types of teeth, the description, surfaces, and additional details needed to identify the tooth inside or outside of the oral cavity. Students will study embryology and histology, occlusion, as well as form and function of the permanent and primary dentitions.

GENERAL EDUCATION GOALS ADDRESSED

[See last page for Course Competency/Assessment Methods Matrix.]

Upon completion of the course, the student will be able:

[Choose up to three goals that will be formally assessed in this course.]

- To apply analytical and problem solving skills to personal, social, and professional issues and situations.
- To communicate successfully, both orally and in writing, to a variety of audiences.
- To construct a critical awareness of and appreciation for diversity.
- To understand and use technology effectively and to understand its impact on the individual and society.
- To develop interpersonal capacity.
- To recognize what it means to act ethically and responsibly as an individual and as a member of society.
- To recognize what it means to develop and maintain a healthy lifestyle in terms of mind, body, and spirit.
- To connect learning to life.

EXPECTED LEARNING OUTCOMES AND RELATED COMPETENCIES:

[Outcomes related to course specific goals. See last page for more information.]

Upon completion of the course, the student will be able to:

1. Demonstrate a basic understanding of the nomenclature in the dental field. (Standard 2-13)
 - 1.1. Students will identify, by name, the two dental arches, the permanent teeth, the deciduous teeth, and the anterior and posterior teeth.
 - 1.2. Name the teeth in the order in which they are positioned in the dental arch, the function of each type of tooth, and the eruption sequence of deciduous and permanent teeth.
 - 1.3. Identify, understand and use the following terms: abrasion, active eruption, anterior, attrition, deciduous, dentition, diphyodont, eruption, exfoliate, heterodont, mastication, mixed dentition, passive eruption, permanent, polyphyodont, posterior, succedaneous.
2. Demonstrate a comprehensive understanding of the Structures of the Oral Cavity. (Standard 2-13)
 - 2.1. Identify, understand and use the terminology associated with the structures of the oral cavity.
 - 2.2. Be able to identify two areas of the oral cavity as well as the boundaries of the oral vestibule and the oral cavity proper.
 - 2.3. Describe each structure of the oral cavity as to location, color, size, and/or shape.
3. Demonstrate a comprehensive understanding of the Tooth and Its Surrounding Structures. (Standard 2-13)
 - 3.1. Identify, understand and use the terminology associated with the tooth and its surrounding structures.
 - 3.2. Identify the divisions of the tooth, surfaces of the tooth, tissues of the tooth, and tissues of the periodontium.
 - 3.3. Describe each tooth tissue and those of the surrounding structures as to location, composition, and function.

4. Demonstrate a comprehensive understanding of the Tooth Identification Systems. (Standard 2-13)
 - 4.1. Identify three different tooth identification systems.
 - 4.2. Describe each identification system as to its designation of dentition, arch, quadrant, and tooth.

5. Demonstrate a comprehensive understanding of Permanent Anterior Teeth (Standard 2-13)
 - 5.1. Be able to identify the location in the dental arch, its universal number, expected eruption date, usual crown and root completion dates, functions, lengths of crown and root, antagonists, location of contact areas, number of lobes and pulp canals and state the age when there is first evidence of calcification during the formation of each tooth.
 - 5.2. Describe the location and/or contour of the incisal edge or cusp slopes, the mesial and distal outlines, contact areas, surface characteristics, the developmental depressions, root shape, cervical lines, and lingual structures.
 - 5.3. Identify, understand and use the terms: anomaly, cingulum, developmental depression, fossa, groove, lobe, pit, root depression, mamelons, cervical line, col area, apex, pulp canal, antagonist, succedaneous tooth, and ridge.
 - 5.4. Identify maxillary incisors and provide information including universal number, function, antagonist and other features.
 - 5.5. Describe the location and contour of each maxillary incisor.
 - 5.6. Identify mandibular incisors and provide information including universal number, function, antagonist and other features.
 - 5.7. Describe the location and contour of each mandibular incisor.
 - 5.8. Identify canines and provide information including universal number, function, antagonist and other features.
 - 5.9. Describe the location and contour of each canine.

6. Demonstrate a comprehensive understanding of Permanent Posterior Teeth (Standard 2-13)
 - 6.1. Be able to identify the location in the dental arch, its universal number, expected eruption date, usual crown and root completion dates, functions, lengths of crown and root, antagonists, location of contact areas, number of lobes and pulp canals and state the age when there is first evidence of calcification during the formation of each tooth.
 - 6.2. Describe the location and/or contour of the buccal, lingual, proximal, and occlusal surfaces as they apply to each posterior tooth.
 - 6.3. Identify contact areas, grooves, cusps, pits, ridges, fossae, outlines, roots of posterior teeth.
 - 6.4. Identify maxillary premolars and provide vital information to include universal number, function, antagonists, and other identifying characteristics.
 - 6.5. Describe the location and contour of each maxillary premolar.
 - 6.6. Identify mandibular premolars and provide vital information to include universal number, function, antagonists, and other identifying characteristics.
 - 6.7. Describe the location and contour of each mandibular premolar.
 - 6.8. Identify maxillary first and second molars and provide vital information to include universal number, function, antagonists, and other identifying characteristics.
 - 6.9. Describe the location and contour of each maxillary first and second molar.
 - 6.10. Identify mandibular first and second molars and provide vital information to include universal number, function, antagonists, and other identifying characteristics.
 - 6.11. Describe the location and contour of each mandibular first and second molar.
 - 6.12. Identify third molars and provide vital information to include universal number, function, antagonists, and other identifying characteristics.

- 6.13. Describe the location and contour of each third molar.
7. Demonstrate a basic understanding of the Primary Dentition. (Standard 2-13)
- 7.1. Identify the names, number, and eruption dates of the primary teeth.
 - 7.2. Describe the value of the primary teeth to their function.
 - 7.3. Compare the primary teeth to the permanent teeth.
8. Demonstrate a basic understanding of Embryology and Histology of tooth development. (Standard 2-14)
- 8.1. Identify the terms and times of the three prenatal phases of pregnancy.
 - 8.2. Describe how the human face develops and changes during the zygote and embryonic phases.
 - 8.3. Describe the life cycle of a tooth and identify the stages.
 - 8.4. Identify the four primary structures of the tooth and the location and function of each.
 - 8.5. Identify the substances of enamel, dentin, cementum, and pulp and their identifying marks.
 - 8.6. Identify the components of the periodontium and the considerations of alveolar bone.
 - 8.7. Describe the structures of the gingiva and mucosa.
 - 8.8. Describe the development of the tooth during the following stages: growth (initiation, proliferation, histodifferentiation, and morphodifferentiation), apposition, and calcification.
 - 8.9. Define active and passive eruption, proliferation, histodifferentiation, morphodifferentiation, apposition, supernumerary, and anomaly.
9. Demonstrate a comprehensive understanding of Occlusion. (Standard 2-13)
- 9.1. Describe Angle's classification of occlusion.
 - 9.2. Describe five occlusal deviations that affect a group of teeth, and explain the importance of primary teeth spacing on occlusion of permanent teeth.
 - 9.3. List and explain five deviations of individual tooth positioning.
 - 9.4. Describe three types of facial profiles.
 - 9.5. Define the following terms: ideal occlusion, normal occlusion, malocclusion, centric occlusion, centric relation, terminal mesial step, terminal plane, primate spacing.
10. Demonstrate a basic understanding of Form and Function. (Standard 2-13)
- 10.1. Describe proximal contact areas, interproximal spaces, and embrasures, and understand their importance to the function and integrity of the masticatory system.
 - 10.2. Define curve of Spee and curve of Wilson

MAPPING LEARNING OUTCOMES TO GENERAL EDUCATION GOALS

[For each of the goals selected above, indicate which outcomes align with the goal.]

Goals	Outcomes
First Goal	
To connect learning to life.	3.1, 3.2, 3.3, 7.1, 7.2, 7.3, 8.1, 8.2, 8.3, 8.4, 8.5, 8.6, 8.7, 8.8, 8.9, 9.1, 9.2, 9.3, 9.4, 9.5, 10.1, 10.2

COURSE TOPICS AND CONTENT REQUIREMENTS:

- I. Nomenclature
 - A. The Dentition
 - a. Primary or Deciduous Dentition
 - b. Permanent Dentition
 - B. Names and Functions of Teeth
 - a. Primary or Deciduous Teeth
 - i. Types of teeth
 - b. Permanent Teeth
 - i. Types of teeth
 - C. The Arrangement of Teeth
 - a. Tooth description
 - D. The Eruption Sequence
- II. Structures of the Oral Cavity
 - A. Related terminology
 - B. The Oral Cavity
 - a. Divisions
 - b. Functions
 - C. Structures External to the Oral Cavity
 - D. Structures of the Oral Vestibule
 - E. Structures of the Oral Cavity Proper
 - a. Roof of the mouth
 - b. Fauces
 - c. Tongue
- III. The Tooth and Surrounding Structures
 - A. Divisions of the Tooth
 - B. Surfaces of the Tooth
 - C. Tissue of the Tooth
 - a. Enamel
 - b. Cementum
 - c. Dentin
 - d. Pulp
 - D. The periodontium
 - a. Cementum
 - b. Periodontal ligament
 - c. Alveolar process
 - d. Gingiva
 - i. Free gingiva
 - ii. Attached gingiva
 - iii. Gingival description
- IV. Tooth Identification Systems
 - A. The Universal Numbering System
 - a. Permanent teeth
 - b. Primary teeth
 - B. Palmer's Notation
 - C. Federation Dentaire Internationale (FDI)/International Standards Organization (ISO)
- V. Permanent Anterior Teeth
 - A. Apical foramen
 - B. Structures common to All Anterior Teeth
- VI. Maxillary Incisors

- A. Maxillary Central Incisor Description
 - a. Labial surface
 - b. Lingual surface
 - c. Proximal Surface
- B. Maxillary Lateral Incisor Description
 - a. Labial surface
 - b. Lingual surface
 - c. Proximal surface
- VII. Mandibular Incisors
 - A. Mandibular Central Incisor Description
 - a. Labial surface
 - b. Lingual surface
 - c. Proximal surface
 - d. Incisal view
 - B. Mandibular Lateral Incisor Description
 - a. Labial surface
 - b. Lingual surface
 - c. Proximal surface
 - d. Incisal view
- VIII. Canines
 - A. Maxillary Canine Description
 - a. Labial surface
 - b. Lingual surface
 - c. Proximal surface
 - B. Mandibular Canine Description
 - a. Labial surface
 - b. Lingual surface
 - c. Proximal surface
- IX. Permanent Posterior Teeth
 - A. General Information
 - a. Occlusal surface
 - b. Lobes
 - c. Pulp canals
 - d. Pulp horn
 - e. Root trunk
 - f. Contact area
 - g. Succedaneous tooth
 - B. Structures Common to All Posterior Teeth
 - a. Ridge
 - b. Fossa
 - c. Groove
 - d. Pit
 - C. Facts to Help Avoid Confusion
 - a. Premolars
 - b. Nomenclature
 - c. Size and shape of surfaces
 - d. Occlusal surface
- X. Maxillary First Premolar Description
 - A. Buccal surface

- B. Lingual surface
- C. Mesial surface
- D. Distal surface
- E. Occlusal view
- XI. Maxillary Second Premolar
 - A. Buccal surface
 - B. Lingual surface
 - C. Mesial surface
 - D. Distal surface
 - E. Occlusal view
- XII. Mandibular First Premolar Description
 - A. Buccal surface
 - B. Lingual surface
 - C. Mesial surface
 - D. Distal surface
 - E. Occlusal view
- XIII. Mandibular Second Premolar
 - A. Buccal surface
 - B. Lingual surface
 - C. Mesial surface
 - D. Distal surface
 - E. Occlusal view
- XIV. Maxillary First and Second Molars
 - A. Buccal surface
 - B. Lingual surface
 - C. Mesial surface
 - D. Distal surface
 - E. Occlusal view
- XV. Mandibular First and Second Molars
 - A. Buccal surface
 - B. Lingual surface
 - C. Mesial surface
 - D. Distal surface
 - E. Occlusal view
- XVI. Third Molars
 - A. Maxillary
 - B. Mandibular
- XVII. Primary Dentition
 - A. Names and numbers of primary teeth
 - B. Eruption/exfoliation
 - C. Comparison with Permanent Teeth
 - D. Description of primary teeth
 - a. Maxillary incisors
 - b. Maxillary canine
 - c. Maxillary first molar
 - d. Maxillary second molar
 - e. Mandibular incisors
 - f. Mandibular canine
 - g. Mandibular first molar
 - h. Mandibular second molar

- E. Importance of Primary Teeth
- XVIII. Embryology and Histology
 - A. Embryology
 - a. Primitive facial development
 - b. Stages and features of pregnancy
 - c. Developmental disturbances
 - B. Histology and the Life Cycle of the Tooth
 - a. Growth and Development
 - i. Initiation –bud stage
 - ii. Proliferation- cap stage
 - iii. Morphodifferentiation/histodifferentiation- bell stage
 - iv. Apposition- maturation state
 - C. Tooth Structure
 - a. Enamel
 - b. Dentin
 - c. Pulp
 - D. Components of the Periodontium
 - a. Cementum
 - b. Periodontal Ligament
 - c. Alveolar bone
 - d. gingiva
 - E. Eruption
 - a. Active eruption
 - b. Passive eruption
 - F. Developmental Anomalies
- XIX. Occlusion
 - A. Ideal occlusion
 - B. Normal occlusion
 - C. Malocclusion
 - D. Occlusal deviations
 - E. Angle's Classification of Occlusion
 - a. Class I- Neutroclusion (normal)
 - b. Class II0 Distocclusion
 - i. Division I
 - ii. Division II
 - c. Class III- Mesioclusion
 - F. Related Terms
 - G. Primary Teeth Occlusion
- XX. Form and Function
 - A. Proximal Contact Areas
 - a. Function of the Contact Areas
 - B. Interproximal Spaces
 - a. Function of Interproximal Space
 - C. Embrasures
 - a. Functions of Embrasures
 - b. Compensating Curvatures
 - i. Curve of Wilson
 - ii. Curve of Spee

INSTRUCTIONAL METHODS:

- Lecture
 - Power Points
 - Class discussion and activities
- Text assignments
- Homework assignments
- Visual aids - videos, transparencies, slides, charts and models
- YouTube
- Blackboard
- Oral Presentations
- Pre tests
- Exams and quizzes
- Comprehensive exam
- Scenarios and Case Studies

INSTRUCTIONAL MATERIALS:

- Laboratory Models
- Head, Neck & Dental Anatomy, 4th Edition, Marjorie J. Short and Deborah Levin-Goldstein 2013 (no newer editions as this time)
- Dental Assisting Coloring Book, 1st Edition, Donna J. Phinney and Judy H. Halstead
- Anatomy of Orofacial Structures: A Comprehensive Approach, 7th Edition, 2014

STUDENT REQUIREMENTS AND METHODS OF EVALUATION:

Grading

All grades will be posted on blackboard. Please log into the course regularly so you can stay notified to any missing assignments or quizzes.

The contents of following categories are weighted equally and account for the following percentage of the final grade.

- (29) Attendance: 10%
- (TBD) Homework: 10%
- (17) Quizzes: 25%
- (8) Exams: 25%
- (1) Dentition Project: 10%
- (1) Final Exam: 20%

- A= 90-100
- B= 80-89
- C= 70-79
- D= 60-69
- F= 0-59

OTHER REFERENCES:

Course Competency/Assessment Methods Matrix

(Dept/# Course Name)	Assessment Options																																		
For each competency/outcome place an "X" below the method of assessment to be used.	Assessment of Student Learning	Article Review	Case Studies	Group Projects	Lab Work	Oral Presentations	Pre-Post Tests	Quizzes	Written Exams	Artifact Self Reflection of Growth	Capstone Projects	Comprehensive Written Exit Exam	Course Embedded Questions	Multi-Media Projects	Observation	Writing Samples	Portfolio Evaluation	Real World Projects	Reflective Journals	Applied Application (skills) Test	Oral Exit Interviews	Accreditation Reviews/Reports	Advisory Council Feedback	Employer Surveys	Graduate Surveys	Internship/Practicum /Site Supervisor Evaluation	Licensing Exam	In Class Feedback	Simulation	Interview	Written Report	Assignment			
	Direct/ Indirect	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	I	I	I	I	D	D									
Assessment Measures – Are direct or indirect as indicated. List competencies/outcomes below.																																			
Nomenclature							X	X	X			X										X	X	X	X	X	X	X	X	X				X	
Structures of the Oral Cavity							X	X	X			X										X	X	X	X	X	X	X	X	X				X	
The tooth and Surrounding Structures				X		X	X	X	X			X											X	X	X	X	X	X	X	X	X				X
Tooth Identification Systems							X	X	X			X											X	X	X	X	X	X	X	X					X
Permanent Anterior Teeth							X	X	X			X											X	X	X	X	X	X	X	X	X				X
Permanent Posterior Teeth							X	X	X			X											X	X	X	X	X	X	X	X	X				X
Primary Dentition			X	X		X	X	X	X			X											X	X	X	X	X	X	X	X	X				X
Tooth Development			X				X	X	X			X											X	X	X	X	X	X	X	X	X				X
Occlusion			X				X	X	X			X											X	X	X	X	X	X	X	X	X				X
Form and Function			X				X	X	X			X											X	X	X	X	X	X	X	X	X				X