



INSTRUCTIONAL PACKAGE

DHG 125

Tooth Morphology and Histology

201810

Fall/2018

INSTRUCTIONAL PACKAGE

Part I: Course Information

Effective Term: 201810

COURSE PREFIX: DHG 125

CONTACT HOURS: 2

COURSE TITLE: Tooth Morphology and Histology

CREDIT HOURS: 2

RATIONALE FOR THE COURSE:

DHG 125 is a foundation course for the Dental Hygiene program. As dental hygienists utilize instruments on teeth, it is essential that they know the definitive anatomy of each individual tooth to successfully practice in their profession. Students will learn the anatomy of each individual tooth, tooth numbering systems to identify teeth, and eruption dates for both primary and permanent teeth. Students will also learn how the tooth develops and the histological structures of the teeth and the surrounding supporting structures. This knowledge will enable students to effectively communicate with their patients regarding various dental conditions.

COURSE DESCRIPTION:

This course covers the embryogenesis and histology of the head and neck structures with primary emphasis on the oral cavity. The formation, eruption patterns, and morphology of primary and permanent dentitions are studied.

PREREQUISITES:

Admittance into the Dental Hygiene Program

CO-REQUISITES:

AHS 113 Head & Neck Anatomy

BIO 211 Anatomy & Physiology II

BIO 225 General Microbiology

DHG 151 Principles of Dental Hygiene

REQUIRED MATERIALS:

Please visit the Bookstore online site for most current textbook information. Use the direct link below to find textbooks.

[BOOKSTORE](#).

Enter the semester, course prefix, number and section when prompted and you will be linked to the correct textbook.

TECHNICAL REQUIREMENTS:

Access to Desire2Learn (D2L), HGTC's student portal for course materials.

WaveNet and D2L email access.

CLASSROOM ETIQUETTE:

As a matter of courtesy to other students and your professor, please turn off cell phones and other communication/entertainment devices before class begins. If you are monitoring for an emergency, please notify your professor prior to class and switch cell phone ringers to vibrate.

*Refer to the HGTC Dental Sciences Program Manual for additional policies on classroom etiquette

Part II: Student Learning Outcomes

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

1. Name and identify the basic anatomical structures of the face and neck, oral cavity and pharynx.
2. Identify the various embryological structures leading to the development of the head and oral cavity.
3. Describe the embryonic development of the human face and the pathologic conditions arising from improper development.
4. Describe the embryonic development of the oral cavity and the pathologic conditions arising from improper development.
5. Describe the basic histologic tissues and their characteristics.
6. Describe the process of tooth development and tooth eruption.
7. Describe the processes involved in the resorption of the roots and shedding of primary teeth and their replacement by permanent teeth.
8. Describe the development and basic histologic characteristics of enamel, dentin, dental pulp, cementum, periodontal ligament, alveolar bone
9. State the names, function, and eruption sequence for deciduous and permanent teeth.
10. Name and identify the divisions, surfaces, and tissues of the teeth.
11. Name and identify the structures that form the periodontium.
12. Discuss the Universal, Palmer, and FDI systems of numbering the teeth and be able to identify a tooth by its number or give the identification number for a given tooth.
13. List the anatomical characteristics of both the crown and the root for the following teeth. Be able to identify them from a drawing, photograph or model, maxillary and mandibular permanent incisors, maxillary and mandibular permanent canines, maxillary and mandibular permanent premolars, maxillary and mandibular permanent molars, deciduous maxillary and mandibular incisors, deciduous maxillary and mandibular canines, deciduous maxillary and mandibular molars
14. Differentiate between permanent and deciduous teeth on the basis of their anatomical differences.
15. Describe the ideal occlusion.
16. Describe and identify the different types of malocclusion using Angle's classification and be able to identify various malocclusion models.
17. Describe the proximal contact areas, embrasures, and interproximal spaces of the teeth and describe their functional importance.

COURSE LEARNING OUTCOMES and ASSESSMENTS*:

Module 1

Materials Covered: Ch. 1 Face and Neck Regions

Assessment: Exam, Homework Assignments, & Final

Objectives:

1. Locate and identify the regions and associated surface landmarks of the face on a diagram and a patient.
2. Integrate the clinical considerations for the surface anatomy of the face into patient examination and care.
3. Locate and identify the regions and associated surface landmarks of the neck on a diagram and a patient.
4. Integrate the study of surface anatomy of the neck into patient examination and care.

Module 2

Materials Covered: Ch. 2 Oral Cavity & Pharynx

Assessment: Exam, Homework Assignments, & Final

Objectives:

1. Locate and identify the divisions and associated surface landmarks of the oral cavity on a diagram and a patient.
2. Integrate the clinical considerations for the surface anatomy of the oral cavity into patient examination and care.
3. Outline the divisions of the pharynx and identify them on a diagram.
4. Integrate the study of surface anatomy of the visible divisions of the pharynx into patient examination and care.

Module 3

Materials Covered: Ch. 3 Prenatal Development

Assessment: Exam, Homework Assignments, & Final

Objectives:

1. Integrate a study of the preimplantation period of prenatal development into the development of the orofacial structures and the clinical considerations due to developmental disturbances associated with these structures.
2. Outline the second, third, and fourth weeks of prenatal development during the embryonic period, including the major events that occur.
3. Integrate the study of the embryonic and fetal periods of prenatal development into orofacial development and the clinical considerations due to developmental disturbances associated with these structures.
4. Outline the fetal period of prenatal development, including the major events that occur after the fourth week until birth within this period.
5. Identify the structures present during prenatal development on a diagram.

Module 4

Materials Covered: Ch. 4 Face and Neck Development

Assessment: Exam, Homework Assignments, & Final

Objectives:

1. Outline the events that occur during facial and neck development, describing each step in its formation.
2. Identify the structures present during facial and neck development on a diagram.
3. Integrate the study of the facial development into understanding the observed orofacial structures and the clinical considerations due to developmental disturbances of these structures.

4. Integrate the study of neck development into understanding the observed orofacial structures and the clinical considerations due to developmental disturbances of these structures.

Module 5

Materials Covered: Ch. 5 Orofacial Development

Assessment: Exam, Homework Assignments, & Final

Objectives:

1. Outline the events that occur during tongue, palatal, nasal cavity and nasal septum development, describing each step of its formation.
2. Integrate the study of palatal development into understanding the present structure and the clinical considerations due to developmental disturbances involved in palatal development.
3. Integrate the study of nasal cavity and nasal septum development into understanding the present structure.
4. Identify the structures present during palatal, nasal cavity, tongue, and nasal septum development on a diagram.
5. Integrate the study of tongue development into understanding the present structure and the clinical considerations due to developmental disturbances involved in tongue development.

Module 6

Materials Covered: Ch. 6 Tooth Development and Eruption

Assessment: Exam, Homework Assignments, & Final

Objectives:

1. Outline the five stages of tooth development.
2. Integrate the study of tooth development and eruption into understanding the present tooth anatomy and the clinical considerations due to developmental disturbances.
3. Outline the process of root development and tooth eruption.
4. Integrate the study of root development into understanding the present tooth anatomy and the clinical considerations due to developmental disturbances.
5. Discuss periodontal ligament and alveolar process development.
6. Identify the structures present during tooth eruption, tooth crown and root development as well as the periodontal ligament and alveolar process development on a diagram.

Module 7

Materials Covered: Ch. 7 Cells

Assessment: Exam, Homework Assignments, & Final

Objectives:

1. Discuss cell properties and components, including the cell membrane, cytoplasm, organelles, and inclusions.
2. Identify the components of the cell on a diagram.
3. Outline the cell cycle, describing the phases of mitosis that are involved.
4. Describe the extracellular materials surrounding the cell and its intercellular junctions.
5. Integrate the study of cell anatomy into the further study of dental histology

Module 8

Materials Covered: Ch. 8 Basic Tissue

Assessment: Exam, Homework Assignments, & Final

Objectives:

1. Describe epithelium and basic tissue properties, including its histology, classification, regeneration, and repair.
2. Describe basement membrane properties, including its histology.
3. Integrate the study of the histology of both epithelium and the basement membrane into the further study of dental histology.
4. Discuss connective tissue properties, including its histology, classification, turnover, and repair.
5. Describe cartilage and specialized connective tissue properties, histology, development, repair, and aging.
6. Describe bone properties, histology, development, remodeling, repair, and aging.
7. Describe blood properties, plasma, and blood components.
8. Integrate the study of the basic histology of connective tissue into understanding the clinical considerations of the orofacial region.
9. Describe nerve tissue and muscle properties and histology as well as the nervous system divisions.

Module 9

Materials Covered: Ch. 9 Oral Mucosa

Assessment: Exam, Homework Assignments, & Final

Objectives:

1. List and describe the types of oral mucosa, characterizing each type of epithelium associated with the oral cavity.
2. Discuss the clinical considerations for oral mucosa pathology, integrating it into patient care.
3. Identify the components of each type of oral mucosa on a diagram.
4. List and discuss the clinical correlations associated with the regional differences in the oral mucosa, integrating it into patient care.
5. Discuss tongue and lingual papillae properties as well as oral mucosa pigmentation and the clinical considerations for both.
6. Discuss the turnover times for regions of the oral cavity and associated clinical correlations, as well as repair and aging considerations, integrating it into patient care.

Module 10

Materials Covered: Ch. 10 Gingival and Dentogingival Junctional Tissue

Assessment: Exam, Homework Assignments, & Final

Objectives:

1. Describe the histologic features of each type of gingival tissue and the clinical considerations for gingival tissue esthetics, integrating it into patient care.
2. Identify the components of each type of gingival tissue on a diagram.
3. Describe dentogingival junctional properties, histology, and development.
4. Discuss the clinical considerations for gingival tissue pathology, integrating it into patient care.
5. Discuss turnover of the dentogingival junctional tissue and its clinical implications.

Module 11

Materials Covered: Ch. 11 Head and Neck Structures

Assessment: Exam, Homework Assignments, & Final

Objectives:

1. Discuss salivary and thyroid gland properties, including its histologic features and development, as well as the clinical considerations concerning salivary gland pathology, integrating it into patient care.
2. Discuss properties of lymphatics, including the lymph nodes and intraoral tonsillar tissue, and the clinical considerations concerning lymphoid tissue pathology, integrating it into patient care.
3. Discuss the properties of the nasal cavity and paranasal sinuses, as well as clinical considerations concerning each of them, integrating it into patient care.

Module 12

Materials Covered: Ch. 12 Enamel

Assessment: Exam, Homework Assignments, & Final

Objectives:

1. Describe the enamel properties and the clinical considerations concerned with enamel structure, integrating it into patient care.
2. Discuss the processes involved in the apposition and maturation stages of enamel, as well as the clinical considerations concerned with enamel formation and pathology, integrating it into patient care.
3. Discuss the histology of enamel and the clinical considerations for dental procedures concerning enamel, integrating it into patient care.

Module 13

Materials Covered: Ch. 13 Dentin and Pulp

Assessment: Exam, Homework Assignments, & Final

Objectives:

1. Describe the properties of dentin and the clinical consideration for dentin structure, integrating it into patient care.
2. Describe the processes involved in the stages of apposition and the maturation of dentin.
3. Outline the types of dentin and discuss the clinical considerations for dentin pathology, integrating it into patient care.
4. Describe pulp properties, including its anatomic components.
5. Discuss the histology of pulp and dentin and the clinical considerations for pulp pathology and repair, integrating it into patient care.

Module 14

Materials Covered: Ch. 14 Cementum, Alveolar Process, and Periodontal Ligament

Assessment: Exam, Homework Assignments, & Final

Objectives:

1. Give an overview of periodontium properties, including its components.
2. Identify each individual component of the periodontium on a diagram.
3. Discuss cementum development, histology, types, and repair as well as the clinical considerations for cementum pathology, integrating it into patient care.
4. Discuss alveolar process properties, including jaw anatomy and histology.
5. Discuss the clinical considerations with the alveolar process, integrating it into patient care.

6. Describe periodontal ligament properties and their clinical considerations.
7. Identify the fiber groups of the periodontal ligament on a diagram and discuss the functions assigned to each of them.

Module 15

Materials Covered: Ch. 15 Overview of Dentitions

Assessment: Exam, Homework Assignments, & Final

Objectives:

1. Describe the two dentitions and the relationship to each other.
2. Recognize tooth types and outline the tooth numbering systems.
3. Assign the correct universal or international number for a tooth and its correct dentition period on a diagram or a skull and for a tooth model or a patient.
4. Define each dentition period and discuss the clinical considerations concerning each dentition period, integrating it into patient care.
5. Use the correct dental anatomy terminology and discuss the clinical considerations concerning tooth anatomy, integrating it into patient care.

Module 16

Materials Covered: Ch. 16 Permanent Anterior Teeth

Assessment: Exam, Lab Assignments, & Final

Objectives:

1. Identify the permanent anterior, incisors, canines teeth and discuss their properties and the clinical considerations concerning them, integrating it into patient care.
2. Describe the general and specific features of the permanent maxillary and mandibular incisors and discuss the clinical considerations concerning them, integrating it into patient care.
3. Describe the general and specific features of the permanent maxillary and mandibular canines and discuss the clinical considerations concerning them, integrating it into patient care.
4. Assign the correct names and universal or international tooth number for each permanent anterior tooth on a diagram or a skull and for a tooth model or a patient.

Module 17

Materials Covered: Ch. 17 Permanent Posterior Teeth

Assessment: Exam, Lab Assignments, & Final

Objectives:

1. Identify the permanent posterior and premolars teeth and discuss their properties and the clinical considerations concerning them, integrating it into patient care.
2. Describe the general and specific features of the permanent maxillary and mandibular premolars and discuss the clinical considerations concerning them, integrating it into patient care.
3. Identify the permanent molars and their general features and discuss their clinical considerations, integrating it into patient care.
4. Describe the general and specific features of the permanent maxillary and mandibular molars and discuss the clinical considerations concerning them, integrating it into patient care.

5. Assign the correct names and universal or international tooth number for each permanent posterior tooth on a diagram or a skull and for a tooth model or a patient.
6. Demonstrate the correct location of each permanent posterior tooth on a diagram, a skull, and a patient.

Module 18

Materials Covered Ch. 18 Primary Dentition

Assessment:

Objectives:

1. Discuss primary teeth properties and the clinical considerations for primary dentition, integrating it into patient care.
2. Describe the general features of primary teeth and each primary tooth type as well as the specific features of each primary tooth.
3. Discuss the clinical considerations concerning primary molars, integrating it into patient care.

Module 19

Materials Covered: Ch. 19 Temporomandibular Joint

Assessment:

Objectives:

1. Describe the histology of each component of the temporomandibular joint and how it relates to its clinical features.
2. Outline the movements of the temporomandibular joint as well as demonstrating them on a skull, a dentition model, and a patient.
3. Discuss the clinical considerations for joint pathology and temporomandibular joint disorders, integrating it into patient care.

Module 20

Materials Covered: Ch. 20 Occlusion

Assessment:

Objectives:

1. Discuss occlusion and centric occlusion and its relationship to functional movements and patterns of the mandible.
2. Discuss arch form and the phases of arch development.
3. Describe dental curvatures and angulations.
4. Discuss centric relation, lateral and protrusive occlusions, and the mandibular rest position and how to achieve each of them on a skull, a dentition model, and a patient.
5. Demonstrate the movements of the mandible related to occlusion.
6. Discuss primary occlusion and the clinical considerations concerning it, integrating it into patient care.
7. Discuss malocclusion and outline Angle classification and how it relates to patient care, including clinical considerations concerning parafunctional habits.
8. Demonstrate an initial occlusal evaluation on a patient and record findings.

****Students – please refer to the Instructor’s Course Information sheet for specific information on assessments and due dates.***

Part III: Grading and Assessment

EVALUATION OF REQUIRED COURSE MEASURES/ARTIFACTS*

Students' performance will be assessed and the weight associated with the various measures/artifacts are listed below.

EVALUATION*

Tests	65%
Homework Assignments	15%
Final Exam	20%
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	100%

****Students, for the specific number and type of evaluations, please refer to the Instructor's Course Information Sheet.***

GRADING SYSTEM:

A = 90-100

B = 80-89

C = 77-79

D = 70-76

F = 69 and below

*Students must pass this class with a 77% or higher to continue in the program.

Grades earned in courses impact academic progression and financial aid status. Before withdrawing from a course, be sure to talk with your instructor and financial aid counselor about the implications of that course of action. Ds, Fs, Ws, WFs and Is also negatively impact academic progression and financial aid status.

The Add/Drop Period is the first 5 days of the semester for **full term** classes. Add/Drop periods are shorter for accelerated format courses. Please refer to the academic calendar for deadlines for add/drop ([ACADEMIC CALENDAR](#)). You must attend at least one meeting of all of your classes during that period. If you do not, you will be dropped from the course(s) and your Financial Aid will be reduced accordingly.

Part IV: Attendance

Horry-Georgetown Technical College maintains a general attendance policy requiring students to be present for a minimum of eighty percent (80%) of his or her classes in order to be eligible to receive credit for any course. However, due to the varied nature of courses taught at the College, a more rigid attendance policy may be required by individual instructors. At a minimum, a student may be withdrawn from a course(s) after he or she has been absent in excess of ten percent (10%) of the total contact hours for a course. **Instructors define absentee limits for their class at the beginning of each term; please refer to the Instructor Course Information Sheet.**

*Refer to the HGTC Dental Sciences Program Manual for additional policies on attendance.

Part V: Student Resources

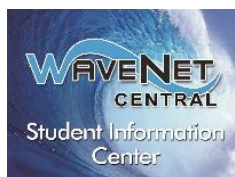


The Student Success and Tutoring Center (SSTC)

The SSTC offers to all students the following **free** resources:

1. **Academic coaches** for most subject areas, **Writing Center Support**, and **college success skills**.
2. **On-line student success and academic support resources**.

Visit the SSTC website: [Student Success & Tutoring Center](#) and visit the student services tab in your WaveNet account to schedule appointments using TutorTrac. For more information, call: SSTC Conway, 349-7872; SSTC Grand Strand, 477-2113; and SSTC Georgetown, 520-1455. Room locations and Live Chat is available on the SSTC website.



Student Information Center: WaveNet Central (WNC)

WNC offers to all students the following **free** resources:

1. **Getting around HGTC:** General information and guidance for enrollment!
2. Use the [Online Resource Center \(ORC\)](#) for COMPASS support, technology education, and online tools.
3. **Drop-in technology support or scheduled training** in the Center or in class.
4. **In-person workshops, online tutorials and more services** are available.

Visit the WNC website: [Wavenet Central](#). Live Chat and Center locations are posted on the website. Or please call one of the following locations: WNC Conway, 349-5182; WNC Grand Strand, 477-2076; and WNC Georgetown, 520-1473.

Disability Services:

HGTC is committed to providing an accessible environment for students with disabilities. Inquiries may be directed to Jocelyn Williams, Director of Student Development on the Conway Campus Jaime Davis, Counselor/Advisor on the Georgetown Campus or Kristin Griffin, Counselor on the Grand Strand Campus. These individuals will review documentation of the student's disability and, in a confidential setting with the student, develop an educational accommodation plan.

Note: It is the student's responsibility to self-identify as needing accommodations and to provide acceptable documentation. After a student has self-identified and submitted documentation of a disability, accommodations may be determined, accepted, and provided.

Statement of Equal Opportunity/Non-Discrimination Statement

Horry Georgetown Technical College prohibits discrimination and harassment, including sexual harassment and abuse, on the basis of race, color, gender, national or ethnic origin, age, religion, disability, marital status, veteran status, sexual orientation, gender identity, or pregnancy in educational programs and/or activities.

Title IX Requirements

Horry Georgetown Technical College prohibits the offenses of domestic violence, dating violence, sexual assault, and stalking. Any student who believe he or she has experienced or witnessed discrimination including sexual harassment, domestic violence, dating violence, sexual assault or stalking is encouraged to report such incidents to one of the College's Title IX Coordinators.

*Faculty and Staff are required to report incidents to the Title IX Coordinators when involving students. The only HGTC employees exempt from mandatory reporting are licensed mental health professionals (only as part of their job description such as counseling services).

Inquiries regarding the non-discrimination policies:	
Student and prospective student inquiries concerning Section 504, Title II, and Title IX and their application to the College or any student decision may be directed to the Associate Vice President for Student Affairs.	Employee and applicant inquiries concerning Section 504, Title II, and Title IX and their application to the College may be directed to the Associate Vice President for Human Resources.
Dr. Melissa Batten, AVP Student Affairs <i>Title IX Coordinator</i> Building 1100, Room 107A, Conway Campus PO Box 261966, Conway, SC 29528-6066 843-349-5228 Melissa.Batten@hgtc.edu	Jacquelyne Snyder, AVP Human Resources <i>Section 504, Title II, and Title IX Coordinator</i> Building 200, Room 212A, Conway Campus PO Box 261966, Conway, SC 29528-6066 843-349-5212 Jacquelyne.Snyder@hgtc.edu