

**NEW YORK CITY COLLEGE OF TECHNOLOGY
CUNY**

**Dental Hygiene Department
Syllabus - Fall 2015**

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Office Hours: Tuesday 10:00AM – 11:00AM
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Course Title: Histology & Embryology

Course Code: Den 1114

Class Hours: 2 per week

Credits: 1

Prerequisites: Admission into the Clinical Dental Hygiene Program

Textbooks:

1) “ILLUSTRATED DENTAL EMBRYOLOGY, HISTOLOGY, AND ANATOMY”
Fourth Edition,
Fehrenbach, Popowics
ISBN: 978-1-4557-7685-6
Elsevier/Saunders, Missouri

2) Workbook “ILLUSTRATED DENTAL EMBRYOLOGY,
HISTOLOGY, AND ANATOMY” Fourth Edition,
Fehrenbach,
Elsevier/Saunders, Missouri
ISBN: 978-1-4557-7645-0

Course Description:

DEN 1114 is a fundamental course that will assist in the development of the dental hygiene competencies. Basic principles of histology and embryology are studied with emphasis on tissues of the oral cavity and contiguous structures and their clinical considerations in dental hygiene treatment. Knowledge of the normal tissues of the oral cavity and surrounding structures is the basis for understanding diseases and abnormalities that are commonly encountered in dental hygiene practice. Also included is the study of the development of the face, oral cavity, the tooth and surrounding structures.

Course Goal

To introduce basic principles of histology and embryology with emphasis on tissues of the oral cavity, the teeth and contiguous structures and their clinical considerations in dental hygiene treatment

DEN 1114 Student Learning Objectives

By the completion of this course the student will be able to:

1. Identify and understand basic principles of development in relation to the histology and embryology with emphasis on tissues of the oral cavity, the teeth and contiguous structures.

Discipline Specific: Knowledge

Gen Ed: Reading – technical

Oral Communication – listening

Visual – graphic representation

Process Skills – memorization

2. Identify and understand the histological and embryological concepts in relation to clinical dental hygiene treatment.

Discipline Knowledge

Gen Ed: Reading – technical

Oral – listening

Visual – graphic representation

Ethical Values – integrity, professional ethics

3. Identify and discuss developmental abnormalities related to histological/embryological concepts.

Discipline Knowledge

Gen Ed: Communication Skills – written

Computer Skills – PowerPoint presentation

Oral – in class presentation

4. Appreciate societal and cultural differences in the perception and reaction to facial abnormalities.

Gen Ed: Communication Skills – written (reflective narrative)

Computer Skills - word processing

Global Knowledge – respect for diversity

5. To develop an awareness of the differences between personal and professional perceptions.

Gen Ed: Group Assignment:

Communication Skills – written (reflective narrative)

Computer Skills - word processing;

Global Knowledge – respect for diversity

Teaching Methodology:

This course utilizes several approaches to teaching including but not limited to lectures on PowerPoint, workbook assignments, writing assignments, group discussions, oral presentation, and videos to accomplish stated objectives.

Students are expected to come prepared for lecture; assignments or special projects are expected on scheduled day. Lectures will address course objectives and will be presented as PowerPoint outlines which will be available for printing from NYCCT's Blackboard account. Lectures may also include videos providing demonstrations to provide visualization, an additional aid in understanding and comprehension of the material. Student oral presentations are prepared from required course materials that cover developmental abnormalities and are included in testing. All lecture objectives if not covered in detail during class time are the responsibility of the students. A writing assignment is required and one assignment will be available for extra credit. Any problem with lectures, materials or objectives should be brought to the attention of the instructor.

Assessment Methods:

Three tests and one cumulative final will be given along with weekly quizzes, and workbook assignments.

- Each test will consist of approximately 25-35 questions. The cumulative final will consist of approximately 50-75 questions. The test format may include multiple choice answers, diagrams and possible short answer fill-ins. Weekly quizzes will also contain this variety of testing modalities.
- Homework assignments are required, counted as part of the final grade and due on dates specified. Failure to hand-in assignments by due date will result in a **10 point reduction** in the assignment grade.
- Oral Presentations and Written Assignments will be graded using rubrics which will be available on class website: <http://openlab.citytech.cuny.edu/groups/den-1114-oral-histology-embryology/>.
- One end of term extra credit assignment will be available. It will only be accepted when handed in by the assigned date and will add **1 point** to the final grade.

Cancelled Classes:

If class is cancelled for any reason the class lecture will be recorded and saved on Blackboard Collaborate. Students are responsible for all of the recorded materials which may include, but are not limited to, the Powerpoint presentation and other lecture related materials recorded in that session.

Grading Policies:

A minimum Final grade of **70** is required to pass **DEN 1114**.

Weekly quizzes and workbook/homework assignments are graded as follows: the number of weekly quizzes is dependent upon scheduling and class progression, Each of the weekly quizzes is weighted equally with the total being worth 10% of the final grade. The workbook assignments (5 assignments in all) are weighted equally and the total is worth 5% of the final grade.

Since students are allowed two absences, students who attend all classes will have the two lowest quiz grades dropped, students who miss one class will have the lowest quiz grade dropped and students who miss two classes will not have any quiz grades dropped.

The Final grade is calculated as follows:

Weekly quizzes	5%
Oral Presentation	5%
Workbook Assignments	5%
Writing Assignment	5%
Tests (4) 15% each	60%
Final	20%

Late Submission Penalty – 10 points off the assignment grade.

Make-up Tests

Make-up tests will only be given with the presentation of proven (documented) extenuating circumstances, and at the convenience of the instructor.

Policy on Retesting

Effective October 1, 1989, no student in a Dental Hygiene course will be retested in any examination for any reason.

A failure grade in a quiz/test/examination will remain and be averaged with all other course grades.

Grading Scale:

Final letter grades will be assigned according to the following standard as published in the NYCCT Student Handbook – page 33:

Grade Numerical Grade Ranges Quality Points

A = 93 – 100	C+ = 77 – 79.9
A- = 90 – 92.9	C = 70 – 76.9
B+ = 87 – 89.9	D = 60 – 69.9
B = 83 – 86.9	F = Below 59.9
B- = 80 – 82.9	

Any course grade below a C may constitute dismissal from the dental hygiene program.

Classroom Management/Disciplinary Policy*

Participating in or performing any of the unacceptable classroom behaviors will result in disciplinary action which may include any of the following:

- 5 points deducted from quiz, exam, final grade for lack of professionalism
- 5 points off **final grade** for lack of professionalism
- suspension for a year
- expulsion from the program or
- failure to be recommended to take the DH licensing exam.

The penalty will be determined by the officiating professor alone or in conjunction with the departmental Course and Standards Committee.

Unacceptable Classroom Behaviors which will result in disciplinary action:

- Changing a quiz, test or exam answer(s) after grading.
- Failing to submit or complete course requirement(s).
- Plagiarizing class or course written assignment(s).
- Cheating during a quiz, test or exam which includes but is not limited to: eyes wandering, looking at another's paper, inappropriate sitting postures, reaching into pockets, looking at notes – written on scrap paper or computerized device, body parts, food or drinks.
- Talking or whispering in any language during quiz, test or exam.
- Bringing textbooks, class notes, cell phone, iPod, iPad or any other visual, auditory or photographic devices to the test room/seat.
- Failing to participate adequately in group assignments(s)/projects(s).
- Failing to comply with faculty's instructions.
- Displaying disrespectful behavior to faculty and/or staff.
- Displaying unethical/disrespectful behavior toward fellow students

Cell phones are to be turned OFF during class unless prior permission for emergency contacts is requested/granted (at which time they will be on vibrate only). TEXTING will not be permitted during class. Any violation of classroom cell phone policy will result in the phone being confiscated for the duration of the class period as well as receiving any of the above mentioned disciplinary actions.

Dishonesty, cheating and plagiarism in any form will not be tolerated.

Any student found cheating on an examination or assignment will receive a grade of **zero for that examination or assignment and will have 5 points deducted from the FINAL GRADE for a lack of professionalism.** Further disciplinary action may be taken according to NYCCT and dental hygiene department policy.

*The penalties recommended in this document are in compliance with standards stated in the college catalog. A completed detailed account of protocol regarding Academic Integrity and disciplinary action is available in the NYCCT College Catalog and via the website.

Academic Problems:

Please contact course instructor if you have trouble understanding concepts or material during this course. If you fail an examination, you are expected to meet with instructor as soon as possible to review the exam and develop a plan for future study.

College Attendance Policy

Students are expected to attend every class period.

As per college policy a student may be absent during the semester without penalty for 10% of the class meeting sessions.

DEN 1114 – 2 absences

Refer to the student manual for department policies concerning attendance, punctuality and professional behavior

College Academic Integrity:**New York City College of Technology Policy on Academic Integrity**

Students and all others who work with information, ideas, texts, images, music, inventions, and other intellectual property owe their audience and sources accuracy and honesty in using, crediting, and citing sources. As a community of intellectual and professional workers, the College recognizes its responsibility for providing instruction in information literacy and academic integrity, offering models of good practice, and responding vigilantly and appropriately to infractions of academic integrity. Accordingly, academic dishonesty is prohibited in The City University of New York and at New York City College of Technology and is punishable by penalties, including failing grades, suspension, and expulsion. The complete text of the College policy on Academic Integrity may be found in the catalog.

Americans with Disabilities Act (ADA). The Americans with Disabilities Act of 1992 and Section 504 of the Rehabilitation Act of 1973 are federal anti-discrimination statutes that provide comprehensive civil rights for persons with disabilities. Among other things this statute requires that all students with documented disabilities be guaranteed a learning environment that provides for reasonable accommodations of their disabilities. If you believe you have a disability requiring an accommodation, please contact the Dental Hygiene Program Director.

Student Support Services (SSSP) is a program which addresses the needs of student with documented disabilities of all types. When student with disabilities self-identify to SSSP, they present documentation for testing accommodations. Documentation supports accommodations including, but not limited to, testing in an alternate location, time extension, scribe services, or computer assisted readers for the blind and other assistive devices during testing. SSSP cannot disclose the student's disability but can disclose any accommodation for which students are eligible. Compliance is legally mandated in accordance with Section 504 of the Rehabilitation Act of 1973, the Americans with Disabilities Act (ADA) of 1990, and the amended ADA of 2008.

Course Outline

DEN 1114 Oral Histology & Embryology

Sections D218 & D219

mehFall2015

Session 1	Sept.1	<p>Class Orientation:</p> <ul style="list-style-type: none"> • Syllabus (course documents & requirements) • Course website <p>A. Overview of the cell:</p> <ol style="list-style-type: none"> 1. The cell 2. Cell division 3. Extracellular materials 4. Intercellular junctions 5. Basement membrane
Sessions 2 & 3	Sept.8 Sept 25	<p>Components of the cell continued; Structure and function of cells and tissues with emphasis on connective and epithelial tissues</p> <p>B. Basic tissues</p> <ol style="list-style-type: none"> 1. Epithelial tissue 2. Connective tissue
Session 4	Sept.29	<p>TEST 1 – 45 min. Begin - Oral gingival mucosa</p>
Sessions 5 & 6	Oct. 6 Oct. 13	<p>Continue Oral gingival mucosa Specialized tissue: Tongue, TMJ, tonsils, Salivary glands</p>
Session 7	Oct. 20	<p>TEST 2 – 45 minutes Begin: Orofacial Embryology</p> <p>A. Prenatal development Pre-implantation and Implantation periods</p>
Sessions: 8 & 9	Oct. 27 Nov. 3	<p>Embryonic Period</p> <p>B. Face and neck development</p> <p>C. Orofacial structure development</p> <ol style="list-style-type: none"> 1. Palatal development 2. Nasal cavity and septum development 3. Tongue development Continue tooth development
Session 10	Nov. 10	<p>TEST 3 – 45 minutes Tooth development and eruption(Odontogenesis)</p> <ol style="list-style-type: none"> a. Initiation stage b. Bud stage c. Cap stage d. Bell stage
Session 11	Nov. 17	<p>e. Apposition and maturation stages Root Formation - Eruption and exfoliation.</p>
Session 12	Nov.24	<p>Test 4 – 45 minutes Enamel and cementum</p>
Session 13	Dec. 1	Dentin & pulp
Session 14	Dec. 8	Periodontium - PDL, bone and the alveolar process
Session 15	Dec. 15	Test 5

Session - Date	TEXT READINGS	Workbook Assignments Due	Oral Presentation
		<u>Pages to Hand in:</u>	<u>Writing Assignments</u> <u>Due Dates</u>
Session 1 - Sept 1	Class Orientation Syllabus + course website		
Session 2 - Sept 8	Overview of the Cell		Group 1 - Students 1, 2 Posted on line by 9/13/15- Sunday midnight
Sept 13 (Sunday)	Basic tissue Types	Writing Assignment Due	
Session 3 - Sept 25	Chapter 7 & 8	22,23,24,25,26,27 (hand in Sept 29)	Group 1 - Students 3,4
Session 4 - Sept 29	TEST 1	Begin Chapter 9 & 10	SESSION
Session 5 - Oct 6	Chapters: 9, 10 Oral Mucosa/tongue	28 to 38 (hand in on Oct.20)	Group 2 - Students 1, 2, 3,4
Session 6 - Oct 13	Chapters: 11,19 TMJ/Salivary Glands/Lymph	61, 62 (hand in on Oct.20)	Group 2 - Students 5, 6, 7, 8,
Session 7 - Oct. 20	TEST 2	Begin Chapter 3 & 4	
Session 8 - Oct. 27	Chapter 4, 5 Orofacial development	8-15 (hand in Nov 10)	Group 3- Students 1,2,3
Session 9 - Nov. 3	Chapter 4,5		Group 4- Students 1, 2, 3, 4
Session 10 - Nov. 10	TEST 3	Begin Chapter 6	
	Odontogenesis - stages		
Session 11 - Nov. 17	Chapter 6 Apposition/Root Formation	16 - 21 (hand in Nov 24)	Group 4 - Students 5, 6,7 ,8
Session 12 - Nov. 24	TEST 4	Begin Chapter 12, part of 13	Group 4 - Students 1, 2
	Enamel,Dentin		
Session 13 - Dec. 1	Chapters 13 Cementum, PDL,	35 -38, 39(Fig.13-9),40-43 (hand in Dec 15)	Group 5- Students 1, 2,3,4
Session 14 - Dec. 8	Chapter 14 Pulp, Alveolar bone/process		Group 5- Students 5,6,7
Session 15 - Dec. 15	Final	Hand in Extra Credit - Time Line	

Student Objectives & Learning Outcomes

Weekly Summary

At the completion of this course the dental hygiene student will be able to:

Week 1

- Identify the components of a cell.
- Describe the function of the components of a cell.
- Identify the different tissues present in the human body.
- Identify the histological components of each tissue studied.
- Describe the function of each tissue studied.

Weeks 2, 3,

- Identify the structure and histology of epithelial and connective tissue.
- Describe in detail, the function of epithelial and connective tissue.
- Recognize the various locations within the human body of epithelial and connective tissue.

Weeks 4, 5, 6,

- Establish the location of the oral mucous membranes and gingiva.
- Identify the histological structures of the oral mucous membrane.
- Identify the macroscopic and microscopic structures of the gingiva, and gingival sulcus.
- Describe the development of the tongue, and correctly define its anatomy.
- Describe the gross anatomy of the temporomandibular joint.
- Describe the histology of the temporomandibular joint.
- Identify the components of the synovial fluid of the TMJ.
- Identify the histology and function of the salivary glands and tonsils.
- Know the distribution and location of the salivary glands.
- Identify the difference between the major and minor salivary glands.
- Discuss the clinical importance of the salivary glands

Week 7, 8, 9

- Define growth and development.
- Describe the development of the primitive mouth.
- Recognize the various processes in the development of the face.
- Outline the process of palatal development.
- Identify the components which formulate the palate and the nasal septum.
- Discuss the various sequels to improper fusion of the maxillary processes.

Week 10,11

- Identify the various stages of tooth development.
- Describe the histological components of the tooth germ.
- Classify the cells involved in tooth development.
- Discuss root formation.
- Recognize the various anomalies which may result from improper tooth development.
- Describe the mechanism of tooth eruption.
- Understand the shedding of the primary teeth.
- Identify all the cells involved in the process of the eruption and shedding of the teeth.

Week 12

Describe the composition of enamel.

Differentiate between the macroscopic and microscopic structure of enamel.

Identify all parts of the microscopic structures of enamel.

Understand the process of mineralization.

Discuss the clinical importance of enamel.

Define the location, function and composition of cementum.

Identify the macroscopic and microscopic components of cementum.

Discuss the clinical importance of cementum.

Week 13

Describe the composition of dentin.

Identify the macroscopic and microscopic structure of dentin

Classify the various types of dentin and their relevance to healthy tooth.

Compare and contrast root vs. crown dentin found in the tooth.

Discuss the clinical importance of dentin.

Define the location, origin and composition of the dental pulp.

Identify the macroscopic and microscopic components of the pulp.

Define the zones of the pulp.

Discuss the functions of the pulp.

Discuss the clinical importance of the pulp.

Week 14

Describe the formation of the PDL.

Identify the location of the periodontal ligament.

Identify the structures and components of the periodontal ligament.

Differentiate between the periodontal ligament fibers.

Discuss the clinical importance of the periodontal ligament.

Describe the gross structure of bone.

Describe the microscopic structure of bone.

Understand the process of bone formation and resorption.

Describe the alveolar process and identify its macroscopic structures

Discuss the clinical importance of the alveolar process.