



**MIDWESTERN  
STATE UNIVERSITY**

A Member of the Texas Tech University System

## COURSE SYLLABUS (Fall 2024)

COURSE: ORAL RADIOLOGY I DNHY 3002 (Lecture - 2 Credit Hours)

DAY/TIME: Tuesday & Thursday 11:00 - 11:50 AM

LOCATION: Centennial Hall Room 103

INSTRUCTOR: Stephanie McCann, RDH, MS, BS  
Centennial Hall, Room #128

Telephone: (940) 397-4650

Email: [stephanie.mccann@msutexas.edu](mailto:stephanie.mccann@msutexas.edu)

OFFICE HOURS: Tuesdays and Thursdays 8am-11am, Fridays by appointment

### REQUIRED TEXTS

Essentials of Dental Radiography for Dental Assistants & Hygienists, 10th Ed, Thomson & Johnson

Wilkins' Clinical Practice of the Dental Hygienist; 13th edition by Boyd, Mallonee & Wyche

Supplemental Resources Available from Dental Hygiene Program:

Radiographic Interpretation for the Dental Hygienist, Haring & Lind

Principles of Dental Imaging, Langland & Langlais

Oral Radiology Principles and Interpretation, 3rd Ed., Goaz & White

### SYLLABUS POLICY

This syllabus is a guide for the course and not a "contract" - and is subject to change. Syllabus changes will be communicated via written revisions with a minimum of a 48 hour notice before changes take place. Please keep this syllabus as a reference. Students are responsible for this information and any changes to the syllabus as explained above.

### COURSE DESCRIPTION

As published in the most current MSU Catalog (2024-2025)

An in-depth introduction to dental radiography. Subject matter includes the history of dental x-rays; theoretical aspects of x-ray production, the x-ray machine; radiation protection; applications of dental x-ray film normal radiographic anatomy; and patient education.

## COURSE PURPOSE

The purpose of this course is to introduce the student to the basics of radiation physics biological effects, how radiation is used for diagnostic purposes and legal/ethical responsibilities of the dental professional regarding radiation. Radiographic equipment, film/ film processing and digital image receptors will be discussed. Students will be able to identify basic landmarks and all structures of the teeth and alveolus on radiographs.

This course must be successfully completed in order to take Oral Radiology II, the didactic/lab course in which they will practice the intraoral technique skills necessary to expose diagnostic radiographs.

## COURSE OBJECTIVES

Given lecture, discussion and slide identification, upon successful completion of this course, students should be able to:

1. Discuss the progress of radiography from its discovery to the present, naming the pioneers and their contributions.
2. Identify techniques that have helped to make x-ray a safe and reliable diagnostic tool.
3. Differentiate between the various atomic and molecular structures important to radiography and the common characteristics of radiation.
4. Identify ways dental x-rays interact with matter.
5. Discuss the major components and functions of a dental x-ray machine.
6. Identify the factors involved in x-ray generation and the sequential steps that must be followed in operating the x-ray machine.
7. Identify the basic requirements of an acceptable diagnostic radiograph.
8. Differentiate between the effect of variations in milliamperage, kilovoltage, distance, and exposure time on the resulting radiograph.
9. Compare the theories of biological damage and the effect of radiation on somatic and genetic cells.
10. Identify the body cells in order of their radio-sensitivity and the factors that determine radiation injuries.
11. List the sequence of events following exposure to radiation and the possible short and long term effects of irradiation, including the effects of oral radiation therapy.
12. Identify the terms used to measure radiation.
13. Differentiate between the terms used in radiation safety procedures and describe various radiation monitoring devices.
14. Identify the parts, identification marks, sizes, customary usage, and film speed of various intraoral dental x-ray films.
15. Differentiate between intraoral and extra-oral films

including, cassettes and the correct methods of film handling and storage.

16. Identify the sequence of steps in processing radiographs and the problem areas in quality control during processing.
17. Recognize and identify normal radiographic landmarks of the face and head and locates these landmarks on the maxilla and mandible.
18. Differentiate between the terms radiopaque and radiolucent, recognizing and describing all structures of the teeth and alveolus.
19. Identify radiopaque/radiolucent dental materials, dental caries, radiopaque/radiolucent pathology, and alveolar bone loss.
20. Identify the types of radiographic errors caused by faulty exposure techniques, faulty processing techniques, and conditions that cause film fog.

Learning Objectives related to textbook chapters and topics will be given for each class session.

## **COURSE EVALUATION**

### **EXAMINATIONS:**

Four (4) examinations will be given for this course. Each exam will be comprehensive from the first class session. Exams will comprise 80% of the final grade in this course.

### **MAKE-UP EXAMINATIONS**

Students missing an examination due to illness will be allowed to make up the exam on the day of their return to school. No grade higher than a 90 will be given for a make-up examination. Students will be allowed to make up only one (1) exam per semester.

Water bottles, cell phones, hand-held calculators/computers are not allowed in the room during any examination. Possession of any of these items during an exam will be construed as academic dishonesty and will be dealt with accordingly.

### ***DENTAL HYGIENE PROGRAM GRADING SCALE***

92-100	= A
83-91	= B
75-82	= C
65-74	= D

AN AVERAGE OF 75 IS THE MINIMUM ACCEPTABLE GRADE FOR SUCCESSFUL COMPLETION OF THIS COURSE.

## **ARTIFICIAL INTELLIGENCE (AI) USAGE POLICY**

The use of generative Artificial Intelligence Tools (AI) that emulate

human capabilities (EX: ChatGPT, Dall-e, Gamma, etc.) is permitted in this course for the following activities and must be disclosed (this includes all graded assignments and activities) in an explanatory appendix describing which tool was used and how (including illustrations and editing):

- Brainstorming and refining ideas
  - Discovery of information on your topic
  - Illustration of topic
- However, the use of AI tools (mentioned above) are prohibited for:
  - Discussion assignments
  - Completion of assignments
  - Making of PowerPoints
  - All written assignments

## DESIRE-TO-LEARN (D2L)

Extensive use of the MSU D2L program is a part of this course. Each student is expected to be familiar with this program as it provides a primary source of communication regarding assignments, examination materials, and general course information. You can log into [D2L](#) through the MSU Homepage. If you experience difficulties, please contact the technicians listed for the program or contact your instructor.

## TECHNOLOGY SUPPORT

Students are responsible for maintaining their devices and ensuring that they are in proper working order throughout the semester. This includes maintaining access to the college wireless network, access to all accounts keeping passwords up to date. Students are expected to keep their devices up-to-date in regard to patches and OS updates. Computers are available on campus in various areas of the buildings as well as the Academic Success Center. Contact your instructor immediately upon having computer trouble. If you have technical difficulties in the course, there is also a student helpdesk available to you. The college cannot work directly on student computers due to both liability and resource limitations however they are able to help you get connected to our online services. For help, log into [D2L](#). It is the student's responsibility to make sure they have access and the ability to have online assignments are turned ON TIME.

## ATTENDANCE

Students in dental hygiene lecture and laboratory courses (not dental hygiene clinical courses) are allowed only two (2) absences in each course during a semester. All absences are counted whether they are for excused and/or unexcused reasons. Any absence over the allowed number for each course will result in a 5 point grade reduction for each absence over the number allowed. The points will be taken off the final course grade. Being tardy two (2) times will be the equivalent of one absence. You will be considered tardy if you enter class after the lecture has begun. Students must be present for the entire class period to get credit for a class session. Students leaving class early will be counted as absent.

## PHONE USE

Cell phone use (texting or verbal) is extremely disruptive to your fellow classmates and to the faculty teaching your course. Therefore, the use of cell phones will not be tolerated, FOR ANY REASON. If you utilize your cell phone it will be confiscated for the remainder of the scheduled day. Repeat offenders will be asked to leave the classroom and will be required to meet with the faculty and the chair of the Dental Hygiene Department. In cases of emergencies, please notify spouses, family and friends to contact you via the program secretary at 397-4764.

## RECORDING OF CLASS LECTURE

Taping of class lectures will be permitted, but ONLY with the PRIOR APPROVAL of the instructor.

## ACADEMIC DISHONESTY

Dental Hygiene Honor System:

All Dental Hygiene courses adhere to the MSU Code of Conduct. In particular, academic dishonesty, however small, creates a breach in academic integrity. A student's participation in this course comes with the expectation that his or her work will be completed in full observance of the MSU Code of Student Conduct. A student should consult the current Student Handbook for answers to any questions about the code.

Many components of dental hygiene courses are designed to be highly interactive with students helping each other learn. Students are encouraged to take full advantage of many resources available including course resources, Internet sites, other textbooks and journals, faculty, and peers when answering objectives. This interactive collegial learning environment is conducive for life-long learning.

Cheating includes, but is not limited to, (1) use of any unauthorized assistance in taking quizzes, tests, or examinations; (2) dependence upon the aid of sources beyond those authorized by the instructor in writing papers, preparing reports, solving problems, or completing other assignments; or (3) the acquisition of tests or other academic materials belonging to the university faculty or staff without permission.

Plagiarism includes, but is not limited to, the use of, by paraphrase or direct quotation without correct citation in the text and on the reference list, the published or unpublished works of another person. Students may NOT submit papers and assignments that they have previously submitted for this or other courses. The use of materials generated by agencies engaged in "selling" term papers is also plagiarism. Students are encouraged to review the tutorials and suggested websites for more information about plagiarism.

Academic dishonesty (cheating, plagiarism, etc.) will not be tolerated in this class. Whenever a student is unsure of whether a particular situation will be interpreted as academic dishonesty, he/she should ask the instructor for clarification. If students are guilty of academic dishonesty, a grade of zero (0) will be given for the quiz, assignment, etc. Cases may also be referred to the Dean of Students for possible

dismissal from the university.

#### **PLEASE NOTE**

By enrolling in this course, the student expressly grants MSU a "limited right" in all intellectual property created by the student for the purpose of this course. The "limited right" shall include but shall not be limited to the right to reproduce the student's work product in order to verify originality and authenticity, and for educational purposes. Specifically, faculty may submit student papers and assignments to an external agency to verify originality and authenticity, and to detect for plagiarism

#### **MSU COHSHS Student Conduct Appeals Committee:**

All Midwestern State University (MSU) students may legitimately appeal a course grade if 1) the student has not be evaluated according to the same criteria as his or her classmates, or 2) an error has been made in grading and/or posting (MSU Student Handbook, p. 37.) In addition, the Office of the Dean of Students has the responsibility to enforce standards of conduct for students as outlined in the MSU Student Handbook(p. 70-80).

When enrolled in the College of Health Sciences and Human Services (COHSHS), students are often assigned to community agencies, such as health care facilities, social service agencies, or athletic environments, as part of their academic process. During these experiences, the student is expected to behave in a manner required of professionals working in this environment. COHSHS students may also be required to successfully complete a licensing/certification process following graduation.

As a result, students in these programs are often held to a different academic and/or behavioral standard than students in other MSU programs. For example, students may not be allowed to progress in a program if they have been unsuccessful (D or F) in a certain number of courses in the major. In these circumstances, COHSHS faculty and administration, all of whom have had similar professional experience, may make decisions which negatively impact students' programmatic progress.

COHSHS students have a right to a review of decisions made by the program faculty, which prevent individuals from progressing in their program in a timely manner. However, those who participate in the review must understand the context of the professions involved. Therefore, issues concerning the professional conduct of students in the COHSHS will NOT be brought to the University Grade Committee, but to the COHSHS Student Conduct Appeals Committee. Specifically, the COHSHS Student Conduct Appeals Committee will review faculty decisions related to:  
Student conduct in a clinical experience, internship, or other work-related environment that negatively impacts the student's academic progress. This conduct may include behavior which is prohibited by licensing and/or professional standards or departmental policy.  
Student removal from a program because of a) professional conduct issues or b) failure to maintain academic standards required specifically by the

program\*

SEE COHSHS WEB SITE FOR A COMPLETE COPY OF THIS POLICY

## SMOKING/TOBACCO POLICY

College policy strictly prohibits the use of tobacco products in any building owned or operated by MSU TEXAS Adult students may smoke only in the outside designated-smoking areas at each location.

## SERVICES FOR STUDENTS WITH DISABILITIES

In accordance with Section 504 of the Federal Rehabilitation Act of 1973 and the Americans with Disabilities Act of 1990, Midwestern State University endeavors to make reasonable accommodations to ensure equal opportunity for qualified persons with disabilities to participate in all educational, social, and recreational programs and activities. After notification of acceptance, students requiring accommodations should make application for such assistance through Disability Support Services, located in the Clark Student Center, Room 168, (940) 397-4140. Current documentation of a disability will be required in order to provide appropriate services, and each request will be individually reviewed. For more details, please go to [Disability Support Services](#)

## CONCEALED CARRY RULES/POLICIES

Effective August 1, 2016, the Campus Carry law (Senate Bill 11) allows those licensed individuals to carry a concealed handgun in buildings on public university campuses, except in locations the University establishes has prohibited. The new Constitutional Carry law does not change this process. Concealed carry still requires a License to Carry permit, and openly carrying handguns is not allowed on college campuses. For more information, Refer to: [Campus Carry Rules and Policies](#)

## ACTIVE SHOOTER

The safety and security of our campus is the responsibility of everyone in our community. Each of us has an obligation to be prepared to appropriately respond to threats to our campus, such as an active aggressor. Please review the information provided by MSU Police Department regarding the options and strategies we can all use to stay safe during difficult situations. For more information, visit [MSUReady - Active Shooter](#). Students are encouraged to watch the video entitled "Run. Hide. Fight." which may be electronically accessed via the University police department's webpage: ["Run. Hide. Fight."](#)

## SOCIAL MEDIA

DO NOT:

- Do not use any social media site related to Midwestern State University or the Dental Hygiene Dept. /Program to harass, threaten, insult, defame or bully another person or entity; to violate any College policy; or to engage in any unlawful act, including but not limited to gambling, identity theft or other types of fraud.

- Post or store content that is obscene, pornographic, defamatory, racist, excessively violent, harassing, threatening, bullying or otherwise objectionable or injurious.
- Post copyrighted content (such as text, video, graphics or sound files) without permission from the holder of the copyright. Remember, even information that is widely available to the public (such as text, photographs, or other material posted on the Internet) may be subject to copyright restrictions that prohibit unauthorized duplication or dissemination



## COURSE SCHEDULE

<b>Session</b>	<b>Date</b>	<b>Chapter</b>	<b>Topic</b>	<b>Reading</b> (for following class)	<b>Homework</b> (DUE BY 11 PM)
<i>Week 1</i>					
CS 1	8.27	Ch 1	Intro, Syllabus Radiation History	Ch 1 (6 pgs)	
CS 2	8.29	Ch 2	Radiation Physics - Part 1	Ch 2 (14 pgs)	Ch 1 due 8/28
<i>Week 2</i>					
CS 3	9.3	Ch 2	Radiation Physics - Part 2	Ch 3 (12 pgs)	Ch 2 due 9/2
CS 4	9.5	Ch 3	Radiation Biology - Part 1		Ch 3 due 9/4
<i>Week 3</i>					
CS 5	9.10	Ch 3	Radiation Biology - Part 2	Ch 4 (10 pgs)	
CS 6	9.12	Ch 4	Radiation Protection		Ch 4 due 9/11
<i>Week 4</i>					
CS 7	9.17		Review for Exam #1		
CS 8	9.19		<b>EXAM #1 (Chapters 1-4)</b>	Ch 5 (7 pgs) Ch 6 (10 pgs)	
<i>Week 5</i>					
CS 9	9.24	Ch 5 Ch 6	Radiation Characteristics Dental Xray Image Characteristics	Ch 7 (6 pgs) Ch 8 (12 pgs)	Ch 5-6 due by 9/23

<b>Session</b>	<b>Date</b>	<b>Chapter</b>	<b>Topic</b>	<b>Reading</b> (for following class)	<b>Homework</b> (DUE BY 11 PM)
CS 10	9.26	Ch 7 Ch 8	Dental Xray Equipment Digital Imaging		Ch 7-8 due by 9/25
<i>Week 6</i>					
CS 11	10.1		Review for Exam #2		
CS 12	10.3		<b>EXAM #2 (Chapters 5-8)</b> <b>*comprehensive from beginning</b>	Ch 12 (4 pgs) Ch 18 (4 pgs)	
<i>Week 7</i>					
CS 13	10.8	Ch 12 Ch 18	Dental Images & Radiographer Intro to Dental Imaging Exams	Ch 11 (12 pgs) Ch 28 (26 pgs)	Ch 12 & 18 due by 10/7
CS 14	10.10 8am-12 pm	Ch 11 Ch 28	Film mounting & viewing Normal Intraoral Anatomy		Ch 11 & 28 due by 10/9
<i>Week 8</i>					
CS 15	10.15		No Radiology Today	Ch 29 (11 pgs)	
CS 16	10.17	Ch 29	Normal Panoramic Anatomy		Ch 29 due by 10/16
<i>Week 9</i>					
CS 17	10.22		No Radiology Today	Ch 29 (11 pgs)	

<b>Session</b>	<b>Date</b>	<b>Chapter</b>	<b>Topic</b>	<b>Reading</b> (for following class)	<b>Homework</b> (DUE BY 11 PM)
CS 18	10.24		Review for exam #3		
<i>Week 10</i>					
CS 19	10.29		<b>EXAM #3</b> (Ch 11, 12, 18, 28, 29)  *comprehensive from beginning		
CS 20	10.31		No Radiology Today	Ch 30 (5 pgs) Ch 31 (16 pgs)	
<i>Week 11</i>					
CS 21	11.5	Ch 30 Ch 31	Intro to Image Interpretation Descriptive Terminology	Ch 32 (25 pgs)	Ch 30-31 due by 11/4
CS 22	11.7	Ch 32	Identification of Restorations, Dental Materials & Foreign Objects		Ch 32 due by 11/6
<i>Week 12</i>					
CS 23	11.12	Ch 32	ID of Restorations, Dental Mat & Foreign Objects cont	Ch 33 (10 pgs)	
CS 24	11.14	Ch 33	Interpretation of Dental Caries	Ch 34 (14 pgs)	Ch 33 due by 11/13
<i>Week 13</i>					
CS 25	11.19	Ch 34	Interpretation of Periodontal Disease	Ch 35 (15 pgs)	Ch 34 due by 11/18
CS 26	11.21	Ch 35	Interpretation of Trauma, Pulpal & Periapical Lesions		Ch 35 due by 11/20

<b>Session</b>	<b>Date</b>	<b>Chapter</b>	<b>Topic</b>	<b>Reading</b> (for following class)	<b>Homework</b> (DUE BY 11 PM)
<i>Week 14</i>					
CS 26	11.26		Review for Exam #4		
	11.28		Happy Thanksgiving!		
<i>Week 15</i>					
CS 27	12.3		<b>EXAM #4 (Ch 30-35)</b> *comprehensive from beginning		
CS 28	12.5		Review for Final Exam		
<i>Week 16</i>	12.9		<b>**COMPREHENSIVE FINAL EXAM**</b>	1-3 pm (tentative)	