

Course Information

Course Number: 3220
Course Title: Oral Radiology
Section: Fall 2024 - Spring 2025
Time: Monday 1pm and Thursday 4 pm
Location: Sessions on **Monday**: Administrative building **room 134, 1-2 pm** & recordings in Canvas
Sessions on **Thursday**: Location Administrative building **room 310, 4-5 pm**
recordings in Canvas
Credit Hours: 2.0

Instructor Details

Course Director: Mehrnaz Tahmasbi Arashlow, DDS
Office: Administrative building, room 217
Phone: 214 828-8197
E-Mail: tahmasbi@tamu.edu
Office Hours: 8 am-5 pm, Monday-Friday (Arranged by appointment)

Additional Participating Faculty

Hui Liang, DDS, MS, PhD
Office: Administrative building, room 219
Phone: 214-828-8392
E-Mail: huiliang@tamu.edu

Scott A. Ehlers, DDS
Office: Administrative building, room 216
E-Mail: ehlerssc@tamu.edu

Michael B. Payne, DDS
Email: mbpayne@tamu.edu

Solaleh Shahmirzadi, DDS, MS
Office: Administrative building, room 216
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Participating OMFR Residents:
Joshua Fountain, DDS
Yilmaz Funda, DDS, PhD
Prajakta Chaudhari, BDS, MS
Madhulika Sarvepalli, BDS, MDS

Grant Kasal, DDS

Course Description

This course is intended to provide the student with an understanding of the generation, properties, and techniques for use of X-rays in dentistry. The students will also develop an understanding of the principles of radiation safety and health physics, interpretative recognition techniques and clinical patient management.

Course Prerequisites

None.

Special Course Designation

Dental hygiene junior course

Course Learning Outcomes

Upon completion of this course, the student will have achieved beginning competence in:

1. The clinical operation of X-ray equipment.
2. The clinical management of patients and clinical records.
3. Exposure, processing and viewing radiographs.
4. Understanding the principles of infection control relating to radiography.
5. Understanding the principles of radiation safety.
6. Understanding the effects of X-radiation on biologic tissue.
7. Recognizing the appearance of anatomic structures in oral radiographs.
8. Recognizing the radiographic appearance of oral developmental anomalies.
9. Recognizing the radiographic appearance of oral disease processes.

Learning Outcomes/Competencies:

- 1.1 Apply ethical reasoning to dental hygiene and practice with professional integrity.
- 1.2 Comply with state and federal laws governing the practice of dentistry and dental hygiene.
- 2.1 Apply critical thinking skills and evidence-based decision making to the practice of dental hygiene.
- 2.3 Communicate effectively with diverse populations without discrimination.
- 6.1 Determine medical conditions that require special precautions or consideration prior to or during dental hygiene treatment.
- 6.2 Perform an extraoral and intraoral examination of the patient including assessment of vital signs and radiographic examination and distinguish normal from abnormal findings.
- 6.3 Manage the patient at risk for a medical emergency and be prepared to handle the emergency should it occur during an appointment.
- 6.5 Analyze and interpret the assessment data to formulate a dental hygiene diagnosis related to and congruent with the diagnosis of the dentist and other health professionals.

- 8.1 Provide an environment conducive to health by using accepted infection control procedures.
- 8.5 Provide dental hygiene services in a variety of settings.

Textbook and/or Resource Materials

White and Pharoah's Oral Radiology: Principles and Interpretation. 8th edition, 2018. Sanjay M. Mallya and Ernest W.N. Lam. Elsevier

Grading Policy

Evaluation Criteria/Methods:

This course consists of three sections: Didactic, preclinical laboratory and clinical. Attendance is required at all assignments. The Dental Hygiene Department or the course director must be notified if an absence occurs or is anticipated. Any preclinical laboratory assignment that was missed must be made up by the end of the fall semester and any missed clinical assignment must be made up prior to the end of spring semester in order to successfully complete those sections of the course. The didactic section will represent 60 percent of the final grade; the preclinical laboratory, 20 percent; and the clinical section, 20 percent. A progress grade based on examinations conducted in the didactic section, and preclinical projects completed in the laboratory section will be reported at the end of the fall semester. Participation in the clinical section of this course requires that a passing grade 70 be achieved in both the didactic and preclinical laboratory sections independently. A final grade based on accomplishments in all three sections, didactic, preclinical laboratory and clinical, will be reported at the end of the spring semester. A passing final grade for this course requires that all three sections be passed independently.

Didactic:

Evaluation in this section will be based on three written examinations, each weighted equally as 20%. Previously tested material may be included in the second and third examinations. If either of the first two examinations is failed, they may be remediated. The course director must be notified within two school days following posting of test scores of an intent to retake the examination. Remedial examinations will be in the essay format and will be scheduled within two weeks of the original examination. The higher of the two examination scores (original versus remedial examination score) will be reported; however, the reported score will not exceed 70.

Several class assignments and unannounced quizzes will count as bonus points to each written exam with the submission of these assignments and quizzes.

Preclinical laboratory:

Evaluation in this section will be based on two parts: completing projects (described in the following page, page 8) by the end of the rotation (part 1) and passing the competency exam (part 2).

Part 1: Evaluation in this section will be based on the completion of projects (described in the following page, page 8), attendance, professional conduct, and participation at each assigned preclinical

laboratory session. Full mouth surveys will be evaluated by criteria described in the following page (page 8). The highest lab score will be counted as 20% of the final grade.

Part 2: Competency exam. Evaluation in this section will be based on the completion of full mouth series without help from attending faculty member/staff. The evaluation of a competency will be rated as Pass or Fail, and not a numeric grade. Passing the competency exam is required for completing the full mouth series. More than 16 % retakes/ 3 retakes is considered failure. Multiple try out until passing the competency exam is allowed.

Clinical:

Evaluation in this section will be based on attendance, professional conduct, and performance during assignment to the Oral Radiography Clinic. Patients requiring full mouth surveys will be assigned. The number of assigned cases will be dependent on the number of patients available. There is no numeric requirement for full mouth surveys. Full mouth surveys will be evaluated by criteria described in the following page (page 8). The average clinical scores of full mouth surveys will be counted as 20% of the final grade.

Grading: The final grade based on the following

3 radiology exams=60%

Preclinical lab rotation=20%

Radiology clinic rotation =20 %

Grading Scale

A= 90-100

B= 80-89

C= 75-79

D= 70-74

F= <70

Attendance and Remediation Policy:

Students are required to attend classes, preclinical laboratory and clinical section at all times. The instructor will check attendance at the start of the class/activity. Students who are not present at that time will be marked absent. For any absences (excused or unexcused), it will be the student's responsibility to contact the Office of Student Affairs (OSA) by sending an email to Sod-attendance@tamu.edu prior to the start of class session. The OSA will decide if your absence is excused or unexcused. Make sure to provide your name, class level, the date(s) of absence and reason for your absence, the names of the instructors that need to be notified. If documentation is requested, it must be from a medical provider on letterhead with the provider's signature and be submitted within 3 business days of returning to school. Please refer to <https://student-rules.tamu.edu/rule07/>

If you are unable to attend a session, notify the Course Director (tahmasbi@tamu.edu) as well.

For radiology pre-clinical labs, and radiology clinic rotation if a student anticipates an absence during their scheduled presentation, it is their responsibility to arrange a switch with another student. Prior notification to the Course Director is required in such cases.

Excused Absences

Illnesses or emergencies: It is understood that absences due to severe or contagious illness, injuries or emergencies may occur. An absence due to illness may require a medical confirmation note from a student's medical provider. For injuries or illnesses that require a student to be absent from class for three or more business days, a note from his or her medical provider is mandatory. If a student has frequent sick days, the program director may require a medical provider's note for each absence.

Note: An absence for a non-acute medical service does not constitute an excused absence.

Religious holy day: A student whose absence is excused under or the observance of religious holy day will be allowed to take an examination or complete an assignment from which the student is excused within 3 days after the absence. **If the student fails to schedule and complete the exam or assignment within three days, a grade of zero will be given.**

Unexcused Absences

Non-emergent appointments (illnesses not considered severe or contagious) scheduled during the class time will be considered an unexcused absence. **No make-up test will be given if an absence is unexcused on a test day.** In addition, examinations **will not** be administered in advance for a planned/anticipated unexcused absence.

Please refer to [Student Rule 7](#) in its entirety for information about excused absences, including definitions, and related documentation and timelines.

Make-up Work Policy

Students will be excused from attending class on the day of a graded activity or when attendance contributes to a student's grade, for the reasons stated in Student Rule 7, or other reasons deemed appropriate by the instructor.

The designation of excused or unexcused absence will be determined on an individual basis by the Office of Student Affairs. For any absences (excused or unexcused), it will be the student's responsibility to review the lecture recordings for the class(es) missed. If a student is absent, the student should contact the Course Director on how to make up the lost instruction, which may involve a presentation or assignment as determined by the course director. Failure to remediate all absences (excused or unexcused) by the final exam or end of semester may result in an "F" for the course. For any absences (excused or unexcused), it will be the student's responsibility to review the lecture recordings for the class(es) missed.

Please refer to [Student Rule 7](#) in its entirety for information about makeup work, including definitions, and related documentation and timelines.

Absences related to Title IX of the Education Amendments of 1972 may necessitate a period of more than 30 days for make-up work, and the timeframe for make-up work should be agreed upon by the student and instructor” ([Student Rule 7, Section 7.4.1](#)).

“The instructor is under no obligation to provide an opportunity for the student to make up work missed because of an unexcused absence” ([Student Rule 7, Section 7.4.2](#)).

Graded Class Participation – N/A

Graded Attendance – N/A

Grading Policy Changes – N/A

Late Work Policy – N/A

Course Schedule

Week	Date	Topics/Required Reading	Instructor(s)
1	Aug. 12	Radiation Physics (Text pp 1-15+ handout)	Dr. Liang
1	Aug. 15	Self-study time	
2	Aug. 19	Radiographic Properties I: Radiographic Density and Contrast (Text pp 72-80+ handout) and Radiographic Properties II: Projection Geometry (Text pp 81-88+ handout)	Dr. Liang
2	Aug. 22	Self-study time	
3	Aug. 26	Digital Imaging (Text pp 41-62+ handout)	Dr. Ehlers
3	Aug. 29	Self-study time	
4	Sep. 2	No class: Labor Day	
4	Sep. 5	Self-study time	
5	Sep. 9	Intraoral Projections (Text 89-118 + handout)	Dr. Tahmasbi
5	Sep. 12	Self-study time	
6	Sep. 16	Quality Assurance and Infection Control (Text pp 250-258+ handout)	Dr. Liang
6	Sep. 19	Self-study time	
7	Sep. 23	Panoramic Radiography (Text pp 132-150+ handout)	Dr. Liang
7	Sep. 26	FIRST EXAMINATION 4-5 pm, room 310 Exam will cover material from lectures on 8/12, 8/19, 8/26, 9/9, 9/16 (blue sections) Topics: Radiation Physics, Radiographic Properties I & II, Digital Imaging, Intraoral Projections, Quality Assurance and Infection Control	
8	Sep. 30	Intraoral Anatomy (Text pp 181-209+ handout) Panoramic Anatomy (Text pp 145-150+ handout)	Dr. Ehlers
8	Oct. 3	Anatomy exercise session/ interpretation session	Dr. Ehlers
9	Oct. 7	Extraoral Projections and Anatomy (Text pp 119-131+ handout)	Dr. Shahmirzadi
9	Oct. 10	Nomad	Dr. Shahmirzadi
10	Oct. 14	Object Localization and Prescribing Diagnostic Imaging (Text pp 87-90, 259-270+ handout)	Dr. Ehlers
10	Oct. 17	Anatomy exercise session/ interpretation session/Self-study (TBD)	Dr. Shahmirzadi
11	Oct. 21	Dental Caries (Text pp 304-317+ handout)	Dr. Liang
11	Oct. 24	Dental caries and periodontal disease exercise	Dr. Liang
12	Oct. 28	Periodontal Diseases (Text pp 318-333+ handout)	Dr. Liang
	Oct. 31	SECOND EXAMINATION 4-5 pm, room 310 Exam will cover material from lectures on 9/23, 9/30, 10/7, 10/14, 10/21 (green sections) Topics: Panoramic Radiography, Intraoral & Panoramic Anatomy, Extraoral Projections and Anatomy, Object Localization and Prescribing Diagnostic Imaging, Dental Caries	
13	Nov. 4	Developmental and acquired Dental Anomalies (Text 335-354+ handout)	Dr. Shahmirzadi
13	Nov. 7	Lesions of the jaws I (Text pp 290-303+handout)	Dr. Shahmirzadi
14	Nov. 11	Radiation Biology (Text pp 16-24, + handout)	Dr. Ehlers
14	Nov. 14	Lesions of the jaws II (Text pp 290-303+handout)	Dr. Shahmirzadi
15	Nov. 18	Radiation Safety and Protection (Text pp 26-38++ handout)	Dr. Ehlers
16	Nov. 25	No class: Fall break	
17	Dec. 2	Cone-Beam Computed Tomography and Other Imaging Modalities (Text pp 151-179, 218-238+ handout)	Dr. Ehlers
18	Finals Week	THIRD EXAMINATION One hour Exam will cover material from lectures on 10/28, 11/4, 11/7, 11/11, 11/14, 11/18, 12/02 (yellow sections) Topics: Periodontal Diseases, Developmental and acquired Dental Anomalies, Lesions of the jaws I, Radiation Biology, Lesions of the jaws II, Radiation Safety and Protection, Cone-Beam Computed Tomography and Other Imaging Modalities	

Other Pertinent Course Information

RADIOLOGY QUALITY EVALUATION (Preclinical/clinical grading on FMX)

(1.0) PROFESSIONALISM / MANAGEMENT SKILLS

Ethics/integrity
Willingness to accept instruction
Patient records/financial management
Work habits/time management/punctuality
Student attire/grooming
Adheres to rules and procedures
Prep for procedure/lab communication
Instrument/material set up/radiation safety
Infection control/cleanliness
Confidence/independence
Reaction to stress
Interpersonal skills (patient and staff)

(2.0) RADIOGRAPHIC TECHNIQUE *

Exposure factors
Image receptor placement/PID placement
Image processing
Mounting and image evaluation
Manual skills



0-1 Errors	=	-0.0
2-3 Errors	=	-0.5
4-5 Errors	=	-1.0
6-7 Errors	=	-1.5
≥ 8 Errors	=	- 2.0

(1.0) RADIOGRAPHIC INTERPRETATION / EVALUATION

Dental caries
Periodontal disease
Anomalies/regressive changes
Other local/systemic diseases

TOTAL = 4.0

4.0 = 100 3.5 = 92 3.0 = 89 2.5 = 83 2.0 = 80 1.0 = 74

NOTE: Professionalism breeches, if significant, may supersede the normal weighting factor at the discretion of the attending faculty.

** Graded on the basis of technical errors, not remakes.*

Dental Hygiene 3220, Oral Radiology Fall 2023

Preclinical laboratory:

Location: Radiology clinic in administrative building room 105
 Reading assignment: Textbook, Chapter 7, clinical handout, training videos

The list of group assignments is available on Canvas under the course 3220. Students are requested to attend sessions based on their respective group numbers.

Assignments

Group/Section	Date	Time	Project
A/1, 2	09/23	2:00	Orientation, First half FMX, horizontal Bitewings
B/1, 2	09/24	2:00	Orientation, First half FMX, horizontal Bitewings
A/1, 2	09/30	2:00	Second half FMX, horizontal Bitewings, grade
B/1, 2	10/01	2:00	Second half FMX, horizontal Bitewings, grade
A/1, 2	10/07	2:00	First half FMX, Vertical Bitewings
B/1, 2	10/08	2:00	First half FMX, Vertical Bitewings
AAOMR MEETING WEEK			
A/1, 2	10/28	2:00	Second half FMX, Vertical Bitewings, grade
B/1, 2	10/29	2:00	Second half FMX, Vertical Bitewings, grade
A/1, 2	11/04	2:00	Competency exam (P/F grade): FMX without help
B/1, 2	11/05	2:00	Competency exam, (P/F grade): FMX without help
A/1	11/11	2:00	Introduction to panoramic radiograph
A/2	11/11	3:00	Introduction to panoramic radiograph
A/1	11/11	3:00	Introduction to occlusal radiography, Nomad practice
A/2	11/11	2:00	Introduction to occlusal radiography, Nomad practice
B/1	11/12	2:00	Introduction to panoramic radiography
B/2	11/12	3:00	Introduction to panoramic radiography
B/1	11/12	3:00	Introduction to occlusal radiography, Nomad practice
B/2	11/12	2:00	Introduction to occlusal radiography, Nomad practice
A/B	11/18	2:00	Retake Competency exam if needed: FMX without help

Traditionally Delivered Course – Fall/Spring =17 weeks, Summer =8 weeks

Non-Traditionally Delivered Course – N/A

Optional Course Information Items

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 (both TAMU and TAMU Health) and keeping passwords up to date. Students are expected to keep their devices up to date in regard to patches and OS updates.

Division of IT

If the student experiences issues with an electronic device, wifi access, axiUm, Zoom, or user accounts, their first point of contact should be the Division of IT Central Help Desk or the local Division of IT at SOD. The Central Helpdesk provides 24-hour support.

Division of IT Central Help Desk Website: https://it.tamu.edu/help/ Phone: 1-979-845-8300 Email: helpdesk@tamu.edu	SOD Local Division of IT Office Room: 519 Phone: 214-828-8248
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COD Instructional Design Team

For electronic exam support or problems concerning other academic technology, such as the LMS (Canvas), ExamSoft, or Exemplify, students should contact the Instructional Design team.

Room: 516 through Academic Affairs

Carmina Castro

ccastro@tamu.edu

(214-828-8316)

Jeff Lowry

lowryj1@tamu.edu

(214-828-8243)

University Policies

Attendance Policy

The university views class attendance and participation as an individual student responsibility. Students are expected to attend class and to complete all assignments.

Please refer to [Student Rule 7](#) in its entirety for information about excused absences, including definitions, and related documentation and timelines.

Makeup Work Policy

Students will be excused from attending class on the day of a graded activity or when attendance contributes to a student's grade, for the reasons stated in Student Rule 7, or other reason deemed appropriate by the instructor.

Please refer to [Student Rule 7](#) in its entirety for information about makeup work, including definitions, and related documentation and timelines.

Absences related to Title IX of the Education Amendments of 1972 may necessitate a period of more than 30 days for make-up work, and the timeframe for make-up work should be agreed upon by the student and instructor" ([Student Rule 7, Section 7.4.1](#)).

"The instructor is under no obligation to provide an opportunity for the student to make up work missed because of an unexcused absence" ([Student Rule 7, Section 7.4.2](#)).

Students who request an excused absence are expected to uphold the Aggie Honor Code and Student Conduct Code. (See [Student Rule 24](#).)

Academic Integrity Statement and Policy

"An Aggie does not lie, cheat or steal, or tolerate those who do."

"Texas A&M University students are responsible for authenticating all work submitted to an instructor. If asked, students must be able to produce proof that the item submitted is indeed the work of that student. Students must keep appropriate records at all times. The inability to authenticate one's work, should the instructor request it, may be sufficient grounds to initiate an academic misconduct case" ([Section 20.1.2.3, Student Rule 20](#)).

Texas A&M School of Dentistry

You can learn more about the Aggie Honor System Office Rules and Procedures, academic integrity, and your rights and responsibilities at aggiehonor.tamu.edu. You can also contact Graduate Studies at 214-828-8182, Student Affairs at 214-828-8210, or your Program Director, for guidance.

Americans with Disabilities Act (ADA) Policy

Texas A&M School of Dentistry

Texas A&M University is committed to providing equitable access to learning opportunities for all students. If you experience barriers to your education due to a disability or think you may have a disability, please contact the Office for Academic Affairs in the Administration Building Room 514 or at (214)-828-8978 or ajwilson@tamu.edu. Disabilities may include, but are not limited to attentional, learning, mental health, sensory, physical, or chronic health conditions. All students are encouraged to discuss their disability related needs with Disability Resources and their instructors as soon as possible.

Title IX and Statement on Limits to Confidentiality

Texas A&M University is committed to fostering a learning environment that is safe and productive for all. University policies and federal and state laws prohibit gender-based discrimination and sexual harassment, including sexual assault, sexual exploitation, domestic violence, dating violence, and stalking.

With the exception of some medical and mental health providers, all university employees (including full and part-time faculty, staff, paid graduate assistants, student workers, etc.) are Mandatory Reporters and must report to the Title IX Office if the employee experiences, observes, or becomes aware of an incident that meets the following conditions (see [University Rule 08.01.01.M1](#)):

- The incident is reasonably believed to be discrimination or harassment.
- The incident is alleged to have been committed by or against a person who, at the time of the incident, was (1) a student enrolled at the University or (2) an employee of the University.

Mandatory Reporters must file a report regardless of how the information comes to their attention – including but not limited to face-to-face conversations, a written class assignment or paper, class discussion, email, text, or social media post. Although Mandatory Reporters must file a report, in most instances, a person who is subjected to the alleged conduct will be able to control how the report is handled, including whether or not to pursue a formal investigation. The University's goal is to make sure you are aware of the range of options available to you and to ensure access to the resources you need.

Texas A&M School of Dentistry

Students can learn more about filing a report, accessing supportive resources, and navigating the Title IX investigation and resolution process on the University's [Title IX webpage](#). School of Dentistry students can contact Graduate Studies at 214-828-8182, Student Affairs at 214-828-8210, Security at 214-828-8335, their Program Director, or their Department Head to report an incident.

Statement on Mental Health and Wellness

Texas A&M University recognizes that mental health and wellness are critical factors that influence a student's academic success and overall wellbeing. Students are encouraged to engage in healthy self-care by utilizing available resources and services on your campus

Texas A&M School of Dentistry

Students who need someone to talk to can call the TAMU Helpline (979-845-2700) from 4:00 p.m. to 8:00 a.m. weekdays and 24 hours on weekends. 24-hour emergency help is also available through the National Suicide Prevention Hotline (800-273-8255) or at suicidepreventionlifeline.org. You can also contact Graduate Studies at 214-828-8182 or Student Affairs at 214-828-8210 for a referral to a local counselor. These counseling sessions are private and confidential, as are any referral requests.

Campus-Specific Policies

Statement on the Family Educational Rights and Privacy Act (FERPA)

FERPA is a federal law designed to protect the privacy of educational records by limiting access to these records, to establish the right of students to inspect and review their educational records and to provide guidelines for the correction of inaccurate and misleading data through informal and formal hearings. Currently enrolled students wishing to withhold any or all directory information items may do so by going to howdy.tamu.edu and clicking on the "Directory Hold Information" link in the Student Records channel on the MyRecord tab. The complete [FERPA Notice to Students](#) and the student records policy is available on the Office of the Registrar webpage.

Items that can never be identified as public information are a student's social security number, citizenship, gender, grades, GPR or class schedule. All efforts will be made in this class to protect your privacy and to ensure confidential treatment of information associated with or generated by your participation in the class.

Directory items include name, UIN, local address, permanent address, email address, local telephone number, permanent telephone number, dates of attendance, program of study (college, major, campus), classification, previous institutions attended, degrees honors and awards received, participation in officially recognized activities and sports, medical residence location and medical residence specialization.

School and Department Policies

School and departmental units may establish their own policies and minimum syllabus requirements. As long as these policies and requirements do not contradict the university level requirements, colleges and departments can add them in this section. Please remove this section if not needed.