Figure 1: Owens Logo.

Course Syllabus
SEMESTER XXXX
School of Nursing and Health Professions

Course Name:	**Dental Radiology Imaging**
Course & Section Number:	**DHY 138-XXX**
Meeting Day(s) & Time(s):	**Lecture**
	Lab
Credits:	**2**
Contact Hours:	**4**
Text:	
Instructor's Name:*	
Office Hours & Location:	
OCC Phone:	
OCC Email: **	
Additional Contact Information:	

*Please call me (name); it is my preferred name. If you have a preferred name, please let me know so I can use it.
**Please use only Owens email for course communications.

Catalog description:
This course emphasizes the importance of radiology in dentistry. The importance of understanding radiation safety for the student and the patient. The student will learn about the x-ray unit, the darkroom/processing, the film, digital imaging, dental film holders and bisecting angle techniques of taking a radiograph.
http://catalog.owens.edu/preview_program.php?catoid=17&poid=5308&returnto=11613

Prerequisite/Corequisites:
Prerequisite- DHY 122
Corequisites- DHY 100, DHY 101, DHY 110, DHY 120

Course Materials:

1. Iannucci, J. and Howerton, L. J. (2022). *Dental radiography: Principles and techniques (*6th ed*.).* St. Louis, MO: Elsevier.
2. Owens Community College, Dental Hygiene Program, Radiation Manual, 2025-2026.

*If a **print book, e-book, or access code** is required for class, you can access the Owens Community College e-Campus Bookstore by accessing the online link, called "Find Books" on the course schedule for each course section. See the example below.*

OER and Owens Community College Library Resources *(Open Educational Resources are free online materials for instructor and student use. Some OER material may be available in print in the Owens Community College Library.)*

Inclusive Access (I.A.) Materials *are included in the cost of the course to save students money through lower negotiated rates with publishers. Courses containing I.A. materials will have it noted on the online class schedule. If your course includes I.A. digital materials, you will receive an email with subject line, "Your inclusive Access Materials," and it will include any codes or digital links.*
The email will come to your Owens Community College email from the Owens e-Campus Bookstore on the first day of class, if not before. Be sure to check your spam (junk email) if you do not find it in your inbox. If the email is not in your inbox or spam folder, contact your instructor immediately. You may also see a folder at the top of your course labelled "Course Materials by eCampus." This folder will contain any needed codes or links to needed materials.
If the I.A. materials also include a printed book or are in print form, the item will be shipped to your address of record automatically based on your enrollment in the course. Please note that some courses do not include printed materials in I.A and those materials would need to be purchased separately using the link on the course schedule. When you access the Find Books link you will see which items in a course are included in I.A.

What You Will Learn in the Course

Course Objectives:
Course will…

Student Learning Outcomes:
Students will:

Outcome	Where Assessed
Apply radiation safety procedures for the operator and the patient.	Radiation Safety SE; Intraoral Technique SE; XCP Assembly SE; Anterior/Posterior Technique SE; XRay2Go Taking a PA and BW SE; Homework; Quizzes; Midterm;

Outcome	Where Assessed
	Final Exam
Identify the components to radiology equipment and describe the function.	Radiation Safety SE; Bitewing Technique SE; Panoramic SE; Image Organization SE; XRay2Go: Operating the Unit SE; Homework, Quizzes; Midterm; Final Exam
Understand the principles and concepts of radiation and x-radiation.	Bitewing Technique SE; Patient Education Competency; Homework; Quizzes; Midterm; Final Exam
Explain the effects of ionizing radiation on living tissues.	Homework; Quizzes; Final Exam
Describe radiation biology health and safety.	XRay2Go Taking a PA and BW SE; Homework; Quizzes; Final Exam
Compare the principles of intraoral techniques including the paralleling technique and bisecting technique for periapicals, bitewing technique (horizontal and vertical), and occlusal technique.	Homework; Quizzes; Final Exam
Use supplementary techniques and patient management including endodontic, localization, edentulous, pedodontic and techniques for difficult anatomy and patients with disabling conditions.	Homework; Quizzes; Final Exam
Summarize the concepts and components of extraoral imaging.	Homework; Quizzes; Final Exam
Compare panoramic radiography and other extraoral radiographic techniques.	Homework; Quizzes; Final Exam
Explain the concepts of alternate image modalities such as three-dimensional imaging.	Homework; Quizzes; Final Exam
Defend quality assurance procedures and discuss the importance of testing.	Homework; Quizzes; Final Exam
Articulate legal and ethical issues related to dental radiography.	Homework; Quizzes; Final Exam
Appraise the factors affecting the quality of the x-ray beam and the radiographic image.	Homework; Quizzes; Final Exam
Identify the appearance of normal radiographic landmarks, artifacts, and shadows.	Homework; Quizzes; Final Exam
Recognize developmental abnormalities and basic disease processes of teeth and supporting structures.	Homework; Quizzes; Final Exam
Articulate viewing techniques and interpretation.	Homework; Quizzes; Final Exam
Utilize digital radiography.	Homework; Quizzes; Final Exam
Categorize the types and uses of dental radiographic surveys, film types, and duplicate film use.	Homework; Quizzes; Final Exam

Outcome	Where Assessed
Describe the proper technique for proper film processing, handling, and record keeping.	Homework; Quizzes; Final Exam
Evaluate the infection control procedures for dental radiography.	Homework; Quizzes; Final Exam

Institutional General Education Competencies:
As a student at Owens Community College, you will take General Education courses as part of your degree program. While specific to the General Education courses, will be reinforced in many of your degree program major courses and may be measured in your capstone course(s) and others as identified.

Competency	Where Assessed
Communicate effectively.	Skill Evaluations, Homework, Quizzes; Final Exam
Act with professional responsibility.	Skill Evaluations, Homework, Quizzes; Final Exam
Demonstrate sensitivity to others' beliefs and values.	Skill Evaluations, Homework, Quizzes; Final Exam
Think analytically, critically, and creatively.	Skill Evaluations, Homework, Quizzes; Final Exam

Academic Support

Disability Services Resource Center: If you have a disability or acquire one, you may be entitled to receive reasonable accommodations intended to assure you an equal opportunity to participate in and benefit from the program. To receive more information or to register for accommodations, please contact the Disability Resource Center at 567-661-7007, email disability@owens.edu, visit https://www.owens.edu/disability/, or stop by College Hall 124.

Tutoring Services: Owens Community College offers academic tutoring and assistance in a variety of subjects including: accounting, computing, economics, mathematics, science, and writing. For more information go to: https://www.owens.edu/successcenters/.

Counseling Services: Counseling Services provides assistance to students experiencing personal, educational, interpersonal/relationship, family, social, or psychological difficulties. If you feel you may benefit from this service, please contact them at counselingservices@owens.edu. More information is at https://www.owens.edu/counseling/.

Campus and Community Connections: The Center for Campus and Community Connections (College Hall 123) is a walk-in office created to provide retention support

through resource stability initiatives and community connections. Go here for more information: https://www.owens.edu/connection/ or contact connections@owens.edu

Owens Library: The Owens Library offers two locations (Toledo and Findlay) as well as online resources. For more information visit https://www.owens.edu/library/.

Students can find more information on campus resources, student support, student life, and security at this link.

General Information

Student Code of Conduct: All students are expected to follow Owens Community College's Student Code of Conduct, which includes academic honesty, encompassing plagiarism. See the Board Policy for more information.

Anti-Discrimination and Harassment & Title IX/Sexual Misconduct: All students, faculty, and staff are expected to follow Owens Community College's Anti-Discrimination and Harassment Policy and the College's Title IX Policy/Sexual Misconduct Procedures and Guidelines. The College strictly prohibits and will not tolerate harassment, discrimination, intimidation, or hostile/offensive working or learning environments.

Religious Accommodations: A student seeking an accommodation for an absence permitted under Ohio's Testing Your Faith Act must provide the instructor with a written email notice with the specific dates for an absence and must do so not later than fourteen (14) days after the first day of instruction. Alternative accommodations are not retroactive, and no academic penalty will be imposed for an absence under the policy*. The request for an alternative accommodation will be kept confidential. Students with questions about a religious accommodation under Ohio's Testing your Faith Act may contact the College's Office of Academic Affairs: provost@owens.edu
The policy may be found on the Owens website: 3358:11-2-63 Accommodation for a Student Absence for the Observance of Religious Beliefs and Practices Policy

Document Collection: Throughout the semester, your instructors may ask for a variety of assignments including tests and/or quizzes for student learning of institutional general education competencies or program assessment. Please save all your class materials until the end of the semester.

Classroom Admittance: OCC classes shall only be attended by the officially registered OCC students or perspective students, instructor of record, guest lecturer, or substitute. Visitors are not permitted to be in the classroom and should not be invited to attend or participate in the class. See FERPA regulations for more information.

Use of AI Tools: This course permits you to use artificial intelligence (AI) tools, such as chatbots, text generators, paraphrasers, summarizers, or solvers, to get guidance on assignments, as long as you do so in an ethical and responsible manner. Essentially, you

can think of these tools as ways to help you learn but not to entirely create work for assignments like discussion board posts, essays, presentation slides, and so on. AI is more like your tutor or TA, not a replacement for your independent thinking.
This means that you must:

- Not use AI tools to replace your own thinking or analysis or to avoid engaging with the course content.
- Cite or explain any AI tools you use. Provide the name of the AI tool, the date of access, the URL of the interface, and the specific prompt or query you used to generate the output.
- Be transparent and honest about how you used the AI tool and how it contributed to your assignment. Explain what you learned from the AI tool, how you verified its accuracy and reliability, how you integrated its output with your own work, and how you acknowledged its limitations and biases.

You are accountable for any mistakes or errors made by the AI tool. Always check and edit the output before submitting your work. If you discover any inaccuracies or inconsistencies in the output after submission, notify the instructor immediately and correct them as soon as possible.
Using AI tools in an unethical or irresponsible manner, such as copying or paraphrasing the output without citation or transparency, using the output as your own work without verification or integration, or using the output to misrepresent your knowledge or skills, is considered a form of academic dishonesty and will result in a zero grade for the assignment and possible disciplinary action. If you have any questions about what constitutes ethical and responsible use of AI tools, please consult with the instructor **before** submitting your work.
NOTE: Some instructors will also list specific acceptable and unacceptable uses or include a statement like "All written assignments, projects, and exams must be completed independently."

Student Responsibilities & Instructor Expectations

Attendance:

1. Attendance for all class/lab is recommended for success.
2. It is important that you attend every class session. Otherwise, you will miss out on the many learning activities that we will engage in.
3. Any absence or tardiness should be reported to the course instructor.

Absence

1. Owens realizes that circumstances beyond one's control may cause late arrival, early departure, or an absence (serious illness or accident for example).
2. In the event of an unforeseen circumstance, it is the student's responsibly to contact the course instructor immediately and appropriate documentation must be provided to the course instructor within 72 hours of the student's return.
3. Late work is eligible for partial credit of 60%.

4. A planned absence may be requested for certain circumstances. If requested and granted, arrangements for a makeup test or exam must be made with the course director prior to the exam date.
5. Absence for three (3) class sessions may result in the lowering of the final grade by one letter grade. If you have an issue for not being able to attend class on time and/or staying for the entire session, please meet with me to develop a plan so you are able to complete the class materials and lab assignments.

How Grades and Determined and Major Assignments

The final course grade is to be computed using the following weights.

Evaluation Measure Assessed	Value	Student Learning Outcome
Quizzes:	45%	1-20
Exams:	40%	1-20
Skill Evaluations:	5%	1-20
Homework:	5%	1-20
Live Patient:	5%	1-6

Grading Procedure:
Grades will be calculated on the following scale.

92% and Above	A
85% to Less than 91%	B
77% to Less than 84%	C
60% to Less than 76%	D
Less Than 60%	F

Both D and F are failing grades and the course must be repeated.

Quizzes (45%) Quizzes will be completed during the first 10 minutes of class. Quizzing helps prepare students for tests. Quizzes offered through blackboard will have a specific time frame for completion. It is the student's responsibility to work within this time frame or contact the instructor with any problems encountered with Blackboard within this time frame. Quiz questions are composed of multiple choices, true or false, and matching questions. **Students who are absent, late to class, or do not complete quiz within Blackboard time frame will not be allowed to take the quiz and will receive a grade of zero.**

If a student receives a "D" or "F" on a Quiz or Exam, the original grade is the recorded grade.

- If a "D" or "F" grade is recorded, students are required to pass the same exam or quiz at 92% to remain in the course.
- The retake must be successfully completed (92%) within one week of receiving the original (D or F) grade.

- Any retakes are not recorded in the final grade.
- After the second attempt, the student must have remediation with the Department Chair prior to the third attempt (within one week).
- Receiving a "D" or "F" grade on the third attempt will result in failure of the course.

Exams (2 total / 40% of the course grade): Tests will be completed during class time or offered through blackboard. Tests offered through blackboard will have a specific time frame for completion. It is the student's responsibility to work within this time frame or contact the instructor with any problems encountered with Blackboard within this time frame. Test questions are composed of multiple choices, true or false, and matching questions. **Students who are absent, late to class, or do not complete a quiz within Blackboard time frame will not be allowed to take the quiz and will receive a grade of zero. The final exam is taken during final exam week and is comprehensive.**

Skill Evaluations (11 total / 5% of the course grade): skill evaluations will be done during in-person labs. In the event a student is absent the day of a skill evaluation, it is the student's responsibility to make any necessary arrangements to make it up. Failure to do so, will results in a grade of zero.

Skill Evaluations will be provided the first day of class in the Blackboard shell. A skill evaluation is used to determine the student's level of skill in a particulate procedure or technique. Students are required to attend all lab session, as this is the time devoted to practicing the skills required for practicing in a dental office. Skill Evaluations are grades according to the criteria printed on each evaluation.

Skill Evaluations may be taken a maximum of three (3) times in order to achieve a passing grade. Students will earn the grade of the passing skill evaluation. Please use practice sessions with the lab instructors prior to retaking any skill evaluation. **All Skill Evaluations must be completed by the last day of class.**

Live Patient (5% of the course grade): Students are required to bring in 1 adult patient to take a full series of radiographs. The patient **must not** have a current (within 5 years) full series of radiographs on file at any dental office. Radiographs for this lab are free to the patient and can be sent to an office of the patient's choosing. Radiographs on the live patient will be taken during finals week during lab time.

Week	Lecture	Lab	Assignments
1	Syllabus **Chapter 1** Radiation History **Chapter 7** Dental X-Ray Equipment **Pre-lecture quiz 1 due**	Identify radiation producing equipment Complete safety documentation Complete HIPAA documentation Introduction to lab procedures Complete the **Radiation Safety Skill Evaluation** **Handout:** Template for CSR	Read Chapter 1 Read Chapter 7 **Pre-Lab 2 due** **Landmarks/DM 1 Assignment due**
2		Introduction to **Intraoral Technique** skill evaluation Introduction to indirect and direct digital imaging. Expose Images Introduction and demonstration of **XCP assembly** skill evaluation	**Pre-lab 3 due** **Landmarks/DM 2 Assignment due**
3	**Chapter 12** Dental Radiographs and the Radiographer **Chapter 18** Introduction to Radiographic Examinations **Chapter 19** Paralleling Technique **Chapter 8** Digital Imaging **Pre-lecture quiz 2 due** **Quiz 1:** Label the Dental X-ray Tubehead, x-ray tube, history, equipment	Complete the **Intraoral Technique Skill Evaluation** Stations: Image receptors and radiographic exams Expose images using the **Ant/Post Paralleling Technique;** prepare for skill evaluation	**Pre-lab 4 due** **Landmarks/DM 3 Assignment due** Read chapter 12 Read chapter 18 Read chapter 19 Read chapter 8

4	**Chapter 4** Radiation Protection **Chapter 13** Patient Relations and the Radiographer **Chapter 14** Patient Education and the Radiographer **Chapter 15** Legal Issues and the Dental Radiographer **Pre-lecture quiz 3 due** **Quiz 2**	Introduction to dental basics Complete the **XCP Assembly Skill Evaluation**	**Pre-lab 5 due** **Landmarks/DM 4 Assignment due** Read chapters 4, 13, 14, 15
5	**Chapter 2** Radiation Physics X-ray Production and Physics Skit **Chapter 11** Film Mounting and Viewing **Pre-lecture quiz 4 due** **Quiz 3:** Radiation History, Dental X-ray Equipment, Dental Radiographs, Digital Imaging and Introduction to Radiographic Examinations, Paralleling Technique	Introduction to image organizing **Complete Quality Assurance Skill Evaluation**	Read chapters 2 and 11 **Landmarks/DM 5 Assignment due**
6	**Chapter 5** Radiation Characteristics **Chapter 6** Dental X-Ray Image Characteristics **Pre-lecture quiz 5 due** **Quiz 4:** Radiation Protection, Radiation Physics	Complete the **Anterior/Posterior Paralleling Technique** Skill Evaluation Introduce XRay2Go	**Pre-lab 7 due** **Landmarks/DM 6 Assignment due** Read chapter 5 Read chapter 6
7	**Chapter 21** Bitewing Technique **Pre-lecture quiz 6 due** **Mid Term EXAM**	Introduction to bitewing technique **XRay2Go: Operating the Unit Skill Evaluation**	**Pre-lab 8 due** **Landmarks/DM 7 Assignment due**

	All material covered prior to this date.		
8	**Chapter 22** Exposure and Technique Errors **Chapter 17** Quality Assurance in the Dental Office **Pre-lecture quiz 7 due**	**XRay2Go: Taking a PA and BW Skill Evaluation**	**Pre-lab 9 due Sunday at 11:59** **Landmarks/DM 8 Assignment due** Read chapter 22 Read chapter 17
9	**Chapter 3** Radiation Biology **Pre-lecture quiz 8 due** **Quiz 5:** Bitewings, Normal Anatomy: Intraoral Images, Restorations, Dental Materials and Foreign Objects; Film Mounting and Viewing	Complete the **Bitewing Technique** Skill Evaluation Bitewing Images Complete	**Pre-lab 10 due Sunday at 11:59** **Landmarks/DM 9 Assignment due** Radiation Biology CE assignment due Read chapter 3
10	**Chapter 21** Vertical Bitewings **Chapter 23** Occlusal Technique **Chapter 20** Bisecting technique **Chapter 24** Imaging of Patients with Special Needs **Pre-lecture quiz 9 due** **Quiz 6:** Chapter 9	Introduction to vertical bitewing and occlusal imaging ****Bring XCP's to lab to sterilize****	**Pre-lab 11 due Sunday at 11:59** **Landmarks/DM 10 Assignment due** Read chapters 20, 21, 23, 24
11 11/3	**Chapter 26** Extraoral **Chapter 27** Three-Dimensional Imaging **Chapter 25** Panoramic Imaging (common errors) **Pre-lecture quiz 10 due**	Introduction to **Panoramic Technique** skill evaluation **Stations:** Panoramic Errors Introduction to Extraoral Imaging	**Landmarks/DM 11 Assignment due** Read chapter 25 Read chapter 26 Read chapter 27

	Quiz 7: Quality Assurance in the Dental Office, and Exposure and Technique Errors, Radiation Biology, Occlusal Technique, Vertical Bitewings	**Sterile film holders are necessary for this lab.** Demonstrate proper OSHA standards when placing film/IR's	
12	**Chapter 23** Localization Techniques **Chapter 30** Introduction to Image Interpretation **Chapter 31** Descriptive Terminology **Pre-lecture quiz 11 due** **Quiz 8:** Radiation Biology, Bisecting technique, Imaging of Patients with Special Needs, Extraoral Imaging, Three-Dimensional Imaging, Panoramic Imaging (common errors)	College closed on Tuesday; Open lab on Thursday	**Pre-lab 13 due S** **Landmarks/DM 12 Assignment due** Read chapter 23 Read chapter 30 Read chapter 31
13	**Chapter 33** Interpretation of Dental Caries **Chapter 34** Interpretation of Periodontal Disease **Pre-lecture quiz 12 due**	Complete the **Panoramic** Skill Evaluation **Sterile film holders are necessary for this lab.** Demonstrate proper OSHA standards when placing film/IR's Review clinic paperwork and procedures Infection Control The student will complete the **Image Organizing skill evaluation** Finish any skill evaluations and retakes	**Landmarks/DM 13 Assignment due** Read chapter 33 Read chapter 34
14	**Chapter 35** Interpretation of Trauma, and Pulpal and	Take radiographs on live patients on	Read chapters 16 and 35

	Periapical lesions **Chapter 16** Infection Control **Pre-lecture quiz 13 due** **Quiz 9:** Localization Techniques, Introduction to Image Interpretation, and Descriptive Terminology, Interpretation of Dental Caries and Periodontal Disease, Normal Anatomy: Panoramic Images and Supplemental Images		**Landmarks/DM 14 Assignment due** **Radiographic Interp. CE due**
15	Review for Comprehensive Final Exam	Take radiographs on live patients on	**1 hour-50 Slide EXAM- 1 minute per slide due** Normal Anatomy: Intraoral Images, Normal Anatomy: Panoramic Images, Processing Errors, Exposure and Technique Errors, Panoramic Errors, Restorations, Dental materials, foreign objects, Caries, Periodontal disease, Trauma and pulpal and periapical lesions.
16 1	**EXAM – Comprehensive 50 minutes in class**		

Disclaimer: The instructor reserves the right to amend this syllabus as deemed necessary and will communicate such amendment to the students in the course. Please note that while unlikely, there is a possibility courses might need to change the delivery method due to external issues like public health concerns, weather issues, etc. If this happens, the college will communicate any changes via email and/or other communication methods.