

**OAKLAND UNIVERSITY**  
**SCHOOL OF HEALTH SCIENCES**  
**Radiologic Technology Program**  
**RAD 3340**  
**Principles of Radiographic Exposure II**

**COURSE:** Radiographic Exposure II

**DAY/TIME:** M 1:30-3:45

**YEAR:** Winter 2018

**CLASS LOCATION:** HHB 5015

**INSTRUCTOR:** William Van Dyke BSBA, RT(R)

**EMAIL:** wvandyke@oakland.edu

**CREDITS:** 2

**OFFICE HOURS:** M 12:00-1:00

**COURSE DESCRIPTION:**

Continued focus on image formation and exposure factor conversions. Factors affecting image quality are addressed.

**PREREQUISITES:** RAD specialization standing.

**REQUIRED TEXT:**

Principles of Radiographic Imaging (5<sup>th</sup> edition), Carlton & Adler

**ASSIGNMENTS:**

Class assignments to be determined by the instructor. **Retention quizzes** to be given at the instructor's discretion. All material for tests will come from lectures, class discussions, demonstrations, the book, and any reading assignments. Students are expected to read the material being covered prior to the lecture. **Tests and quizzes will be available for review for up to two weeks after the exam date.**

**COURSE OBJECTIVES/LEARNING OUTCOMES:**

Students should gain an understanding of the concepts required of a beginning student radiographer. Discussion of radiation badge reports will take place during this class. Objectives for each chapter are as follows.

**Density (Chapter 26)**

1. Define density
2. Describe the effects of density on image appearance
3. Explain how each influencing factor affects image density

**Contrast (Chapter 27)**

1. Explain various terms used describe contrast
2. Describe the effect of fog on contrast
3. Discuss how kV is the controlling factor of contrast

**Recorded Detail and Distortion (Chapters 28&29)**

1. Define recorded detail and distortion
2. Explain the effect of various distances on recorded detail
3. Describe the correct relationship between central ray, part and image receptor

**Exposure Conversion Problems (Chapter 34)**

1. Discuss limitations of standard conversion tables
2. Explain concept of direct and inverse relationships
3. Calculate new exposure factors for multiple variable changes

**Digital Image Receptor Module**

1. Define analog vs. digital image receptors
2. Identify different photostimulable phosphor characteristics
3. Explain flat panel detector image capture

**GRADING:** Graded assignments and quizzes will be combined to equal one test grade. Each test, midterm, and final exam will all be considered test grades. The final exam will count as two test grades if your score will improve your class average, otherwise it will count as one test grade. All test grades will be averaged for a final grade.

**GRADING SCALE:** A grade of 75% is required to pass this class.

Percent	Grade point	Percent	Grade point	Percent	Grade point	Percent	Grade point
97-100	4.0	85	3.2	74	2.4	66	1.6
96	3.9	84	3.1	73	2.3	65	1.5
95	3.8	80-83	3.0	72	2.2	64	1.4
94	3.7	79	2.9	71	2.1	63	1.3
93	3.6	78	2.8	70	2.0	62	1.2
90-92	3.5	77	2.7	69	1.9	61	1.1
88-89	3.4	76	2.6	68	1.8	60	1.0
86-87	3.3	75	2.5	67	1.7		

**PROJECTS:** When the instructor assigns a project that requires a student to make actual exposures, instructions will be provided as to how the lab should be conducted. The student is required to follow these instructions and to maintain all standard radiation protection practices. Additionally, the student must complete these projects in an area in which a registered radiologic technologist is readily available for consultation. Radiographic rooms must be left clean, neat and non-energized. Students failing to conduct the lab project with carefulness, cleanliness or respect will suffer a 10 percentage point reduction in their grade for the project.

**CLASS POLICIES:**

1. Academic conduct policy: All students are expected to complete their own work unassisted by anyone else, unless specified by the instructor for group assignments.
2. Add/Drops: **Deadline for dropping this class will follow university policy.**
3. Special Considerations: Students with disabilities who may require special considerations should make an appointment with campus Disability Support Services, 106 North Foundation Hall, phone number 248 370-3266. Students should also bring their needs to the attention of the instructor as soon as possible. For academic help, such as study and reading skills, contact the Academic Skills/Tutoring Center, 103 North Foundation Hall, phone 248 370-4215.
4. Attendance policy: Students are expected to attend all scheduled class meetings. One absence is permitted per semester. All other absences will reduce your final grade by 1% for each occurrence. Twenty or more minutes late to class will constitute an absence.
5. Due dates and late submissions: Assignments must be completed on time. Late assignments will receive a 10 percentage point deduction for each day late.
6. Missing of tests or assignments: If you know that you will miss a scheduled test/exam/assignment, contact the instructor for options. Students that miss an exam, but take it before the scheduled date, will not suffer grade reduction. Students that miss a scheduled test/exam may still take the exam, if approved by the instructor. Unannounced quizzes are not taken in advance nor made up afterward. A grade of “0” will be earned for missed unannounced quizzes.

7. Dress code: Students will come to class dressed appropriately.
8. Cell phone policy: Cell phones must be turned OFF or set to vibrate while in class. If a cell phone makes an audible noise other than vibrate during class, the student will immediately leave the class for the remainder of the class period.
9. In order to be successful in this class:
  - a. students must read the material assigned with intent
  - b. students must participate in class lectures or discussions
  - c. students must be engaged in all class exercises or team projects
  - d. students must be respectful to instructors, any guest speakers and other students in class
10. Instructor is available for contact via OU e-mail. I will respond to your e-mails in a timely manner.

### **TENTATIVE COURSE OUTLINE**

*\*\*Subject to change at the instructor's discretion\*\**

<b>Date</b>	<b>Topic(s)</b>	<b>Text</b>
1/8	Review final exam/syllabus	
1/22	Density	Ch.26
1/29	<b>Test</b>	
2/5	Contrast	Ch. 27
2/12	<b>Test</b>	
2/26	Recorded Detail and Distortion	Ch. 28&29
3/5	<b>Test</b>	
3/12	<b>Midterm</b>	
3/19	Exposure Conversion Problems	Ch. 34
3/26	<b>Test</b>	
4/2	Digital Image Receptors Module	
4/9	Module Discussion and Exercises	
4/16	Review for Final	
4/23	<b>Final Exam (8:00 am)</b>	