

## MASTER SYLLABUS

### COURSE NUMBER AND TITLE:

RAD 202-3 Radiographic Physics

### COURSE DESCRIPTION:

This course will concentrate on general theories of physics as they relate to matter, mechanics and electricity. It also involves the study of the nature and production of radiation and understanding of the complexity of radiographic equipment and x-ray circuitry. Restricted to RADS majors.

All Radiography students must pass each of their Radiologic Science courses (RAD) with a grade of "C" or better (the minimum requirement) in order to satisfy Program requirements, and stay in the Program.

Any Radiography student that does not meet the minimum course requirement (a course grade of "C" or better) will not be allowed to continue in the Program. The student is allowed to re-apply to the Program the following year.

### COURSE OBJECTIVES:

1. Demonstrate an understanding of the basic principles of atomic structure.
2. Demonstrate an understanding of the basic physical principles of mechanics.
3. Demonstrate an understanding of the basic physical principles of electricity and magnetism.
4. Demonstrate an understanding of x-ray circuitry and its component parts.
5. Describe the physical aspects of radiation production and radiation protection.

### COURSE OUTLINE:

### PERCENTAGE:

- |   |     |
|---|-----|
| 1. Basic physics                                      | 10% |
| 2. X-ray generator components                         | 30% |
| 3. Radiographic rectification                         | 10% |
| 4. The complete x-ray circuit                         | 20% |
| 5. X-ray tubes  | 10% |
| 6. Radiation Protection with Interactions with Matter | 20% |

### MEANS OF STUDENT EVALUATION:

#### Grading Scale

93 - 100 = A

85 - 92 = B

75 - 84 = C

0 - 74 = F

**PREREQUISITES:** Acceptance into Radiologic Sciences Program

**Co-REQUISITES:** RAD 112, RAD 112L and RAD 102

**TEXTBOOK:**

1. Carlton, R.R. & Adler, A.M. (2019). Principles of Radiographic Imaging: An Art and a Science, 6<sup>th</sup> edition. Cengage Learning. ISBN-13: 978-1439058725.
2. Optional: Carlton, R.R. & Adler, A.M. (2019). Workbook for Carlton/Adler's Principles of Radiographic Imaging: An Art and a Science, 6<sup>th</sup> edition. Cengage Learning. ISBN-13: 978-1439058701.