

## **Course Description**

**RAT 2241 | Radiobiology | 2 credits**

This course is designed to establish a basic knowledge of principles of cell response to radiation. Factors influencing the effects of radiation, tissue sensitivity, and environmental factors are discussed.

## **Course Competencies**

### **Competency 1:**

The student will demonstrate an understanding of the integral aspects of radiation biology required of a radiation therapist by:

1. Integrate laws and principles of radiation biology to the clinical practice of radiation therapy.
2. Distinguish between units of radiation quantities and radiobiologic measures using SI units.
3. Describe the 4 Rs of radiobiology.

#### Learning Outcomes

- \*Learning outcome 3\*

### **Competency 2:**

The student will demonstrate knowledge of biology of the cancer cell by:

1. Distinguish between somatic and genetic effects of radiation exposure.
2. Evaluate factors influencing radiobiologic/biophysical events at the cellular and subcellular level.
3. Determine biologic damage due to radiation-induced chemical reactions.

#### Learning Outcomes

- \*Learning outcome 3\*

### **Competency 3:**

The student will demonstrate knowledge of biological interactions of radiation by:

1. Discuss radiation effects on the cell cycle.
2. Identify radiosensitive components of the cell.
3. Describe radiation syndromes and factors influencing response.

#### Learning Outcomes

- \*Learning outcome 3\*