

## Washtenaw Community College Comprehensive Report

### RAD 218 Radiation Biology and Protection Effective Term: Spring/Summer 2019

#### Course Cover

**Division:** Health Sciences

**Department:** Allied Health

**Discipline:** Radiography

**Course Number:** 218

**Org Number:** 15600

**Full Course Title:** Radiation Biology and Protection

**Transcript Title:** RAD Biology and Protection

**Is Consultation with other department(s) required:** No

**Publish in the Following:** College Catalog , Time Schedule , Web Page

**Reason for Submission:** Course Change

**Change Information:**

#### **Outcomes/Assessment**

**Rationale:** The departmental final exam has changed as the course content has evolved to match the current science, so the rubric used previously was no longer valid. Therefore, a better assessment tool has been developed to measure student outcomes for this course.

**Proposed Start Semester:** Spring/Summer 2019

**Course Description:** In this course, students will learn the principles of radiobiology and radiation protection. Students will analyze the basic theories of the biological, genetic and somatic effects of radiation on human cells and tissue and learn the current radiation protection standards and practices used in the healthcare setting to protect themselves, patients and others from exposure to radiation.

#### Course Credit Hours

**Variable hours:** No

**Credits:** 3

**Lecture Hours: Instructor:** 45 **Student:** 45

**Lab: Instructor:** 0 **Student:** 0

**Clinical: Instructor:** 0 **Student:** 0

**Total Contact Hours: Instructor:** 45 **Student:** 45

**Repeatable for Credit:** NO

**Grading Methods:** Letter Grades

Audit

**Are lectures, labs, or clinicals offered as separate sections?:** NO (same sections)

#### College-Level Reading and Writing

College-level Reading & Writing

#### College-Level Math

#### Requisites

**Prerequisite**

RAD 120 minimum grade "C-"

#### General Education

## **Request Course Transfer**

### **Proposed For:**

## **Student Learning Outcomes**

1. Identify the effects of ionizing radiation on human cells and tissues.

### **Assessment 1**

Assessment Tool: Students' homework assignments that treat the effects of ionizing radiation on human cells and tissues.

Assessment Date: Fall 2021

Assessment Cycle: Every Three Years

Course section(s)/other population: All sections

Number students to be assessed: All students

How the assessment will be scored: Answer key

Standard of success to be used for this assessment: All students must receive an 85% or higher on both assignments

Who will score and analyze the data: RAD faculty

2. Recognize the current radiation protection standards and practices.

### **Assessment 1**

Assessment Tool: Students' homework assignments that treat current radiation protection standards and practices

Assessment Date: Fall 2021

Assessment Cycle: Every Three Years

Course section(s)/other population: All sections

Number students to be assessed: All students

How the assessment will be scored: Answer key

Standard of success to be used for this assessment: All students must receive an 85% or higher

Who will score and analyze the data: RAD faculty

## **Course Objectives**

1. State the somatic and genetic effects of radiation exposure on human cells and tissues.
2. State the typical dose rate for routine radiographic procedures.
3. Compare and contrast the basic methods and instruments for radiation monitoring, detection and measurement.
4. Compare and contrast the different methods to reduce radiation exposure to patients and medical personnel.
5. List and explain the National Council on Radiation Protection (NCRP) regulations regarding the use of ionizing radiation.
6. Calculate the dose rate using the inverse square law.

## **New Resources for Course**

### **Course Textbooks/Resources**

Textbooks

Manuals

Periodicals

Software

### **Equipment/Facilities**

Level III classroom

Testing Center

Data projector/computer

<b><u>Reviewer</u></b>	<b><u>Action</u></b>	<b><u>Date</u></b>
<b>Faculty Preparer:</b> <i>Jim Skufis</i>	<i>Faculty Preparer</i>	<i>Nov 15, 2018</i>
<b>Department Chair/Area Director:</b> <i>Kristina Sprague</i>	<i>Recommend Approval</i>	<i>Nov 16, 2018</i>
<b>Dean:</b> <i>Valerie Greaves</i>	<i>Recommend Approval</i>	<i>Dec 06, 2018</i>
<b>Curriculum Committee Chair:</b> <i>Lisa Veasey</i>	<i>Recommend Approval</i>	<i>Jan 14, 2019</i>
<b>Assessment Committee Chair:</b> <i>Shawn Deron</i>	<i>Recommend Approval</i>	<i>Jan 14, 2019</i>
<b>Vice President for Instruction:</b> <i>Kimberly Hurns</i>	<i>Approve</i>	<i>Jan 23, 2019</i>