

Virginia Western Community College
COURSE SYLLABUS

- I. **COURSE NUMBER** ROC 241
- II. **COURSE TITLE** Therapy Physics II
- III. **CREDIT HOURS** 2
- IV. **CONTACT HOURS** 30
- V. **COURSE PREREQUISITES** ROC 141, MTH 163

VI. COURSE DESCRIPTION

Studies methods and devices used for measurement of and protection from ionizing radiation. Various types of brachytherapy applicators and dose distribution systems will be discussed. Electron beam dosimetry will be introduced. The physics component of quality assurance in radiation oncology will be discussed as well as various treatment methods

VII. COURSE OBJECTIVES

1. Discuss radiation safety and protection.
2. Examine different methods and equipment used to measure ionizing radiation.
3. Describe the relationship between beam energy, its penetration, absorption, and scatter
4. Describe the method of brachytherapy including source selection, source placement, and calculations for permanent and temporary implants.
5. Discuss the relationship between x-ray beam quality and the half-value layer.
6. Describe the interactions of electrons in matter and the characteristics of clinical electron beams.
7. Discuss quality assurance in radiation oncology physics.
8. Examine different treatment methods currently being used in radiation oncology

VIII. REQUIRED TEXT

McDermott, P. and Orton, C. (2010). *The physics and technology of radiation therapy.* Medical Physics Publishing. ISBN-13: 978-1-930524-32-3

A scientific calculator is required.

IX. GRADING FORMAT

A = 93 – 100

B = 84 – 92

C = 75 – 83

F = 75 and below

X. METHOD OF EVALUATION

Tests (3)	90%
Assignments/ Participation	10%

XI. ACADEMIC HONESTY

This course will follow the VWCC Student Conduct policy found in the online VWCC Student Handbook under the “VWCC Course Policies” tab. If a student is found cheating on any assignment, test, or quiz a grade of “F” will be awarded

XII. CLASS EXPECTATIONS

Students are expected to be prompt and will not be given credit for attending class if entering ten minutes after class has started. No makeup tests will be given unless a legitimate written excuse; i.e. illness or prior notification is provided. Grades will be modified for late or missed assignments.

MAKE UP/LATE WORK POLICY

Submit assignments ON TIME. As responsible learners, you need to manage your learning schedules and finish all assignments on time. Assignments submitted past the stated due date will be lowered one letter grade per day late. A grade of “0” will be given for any assignment not turned in.

XIII. INCLEMENT WEATHER

In the event of a college closing due to inclement weather on a testing day, the deadline for taking the test will be extended 24 hours or an additional day when the college re-opens.

College inclement weather link:

<http://www.viriniawestern.edu/about/inclementweather.php>

Students should try to take tests/exams before the deadline. In the case of inclement weather which closes the student learning center, the instructor will extend the deadline the number of days that the learning center was closed. In the case of extreme weather, the instructor will work with the student to make suitable arrangements.

XIV. STUDENT RESOURCES

Additional student resources are available under the Student Resources tab on Blackboard.

XV. INSTRUCTOR

Dan Meleason

Email: Daniel.Meleason@HCAhealthcare.com

Office Hours: Office hours are by appointment.

The instructor will respond to any email sent by the student within 72 hours.

[ADA Statement](#) (PDF)

[Title IX Statement](#) (PDF)