

Virginia Western Community College
COURSE SYLLABUS

I. COURSE TITLE THERAPY PHYSICS II

II. COURSE PREFIX/NUMBER ROC 120

III. CREDIT HOURS 2

IV. CONTACT HOURS 30

V. COURSE PREREQUISITES ROC 141, MTH 163

III COURSE DESCRIPTION

Basic clinical medical physics topics will be covered in this course. Dose calculation methodologies and dose distribution characteristics of photon and electron beams will be examined. An overview of absolute reference dosimetry for clinical photon beams will be covered. Topics in brachytherapy and radiation protection will also be covered.

IV. COURSE OBJECTIVES

1. Understand and describe depth dose characteristics of Megavoltage Photon and Electron Beams
2. Understand concepts in Megavoltage Photon Beam Reference Dosimetry
3. Perform Monitor Unit Calculations for radiation therapy treatment planning
4. Understand isodose distributions in two dimensions.
5. Describe the method of brachytherapy including source selection, source placement, and calculations for permanent and temporary implants.
6. Describe the interactions of electrons in matter and the characteristics of clinical electron beams.
7. Understand and apply the principles used in radiation safety and radiation protection

IV. REQUIRED TEXTS

McDermott, P. and Orton, C. (2018). The physics and technology of radiation therapy. 2nd edition, Medical Physics Publishing. ISBN-13: 978-1-930524989

A scientific calculator is required

V. GRADING FORMAT

A = 93 – 100

B = 84 – 92

C = 77 – 83

F = 76 and below

VI. METHOD OF EVALUATION

Tests (2) 100%

Extra Credit Quizzes: These are worth 5 points each and added to your test scores.

Quizzes and tests will be closed book and closed notes. A formula sheet will be provided. Pocket calculators will be allowed. You will not be allowed to use your phone as a calculator or for any other source of information during quizzes or tests.

In order to receive extra credit, you will be required to come to class to take the quizzes. The quizzes will not be given virtually from home.

Free response answers must be written in complete sentences

VII. INSTRUCTOR

Richard P. Mancine, DMP, DABR

Phone: 540-440-4550

Email: rm52263@email.vccs.edu

Office Hours: Office hours are by appointment.

The instructor will respond to any email sent by the student within 72 hours. I am available to stay after class for as long as needed to answer any questions. I am unable to schedule in-person help outside of class window

VIII. 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

IX. 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 and prior notification is provided.

XI. 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: VWCC Inclement Weather Policy [VWCC Inclement Weather Policy](#)

Students should try to take tests/exams before the deadline. In 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.

XII. 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. AI USAGE

For the duration of this course, the use of Generative AI in assignments is strictly prohibited. Assignments are opportunities for personal growth, critical thinking, and applying your acquired knowledge. Your individual effort and creativity are essential in demonstrating your understanding of the course material. Dependence on AI undermines these objectives and compromises the integrity of the learning process. We appreciate your commitment to academic honesty and dedication to upholding this course's principles by refraining from using Generative AI in your assignments.

Please refer to Part 2 in this syllabus module for information regarding Disability Services.