

El Paso Community College

Syllabus

Part II

Official Course Description

SUBJECT AREA	<u>Radiation Therapy Technology</u>
COURSE RUBRIC AND NUMBER	<u>RADT 1344</u>
COURSE TITLE	<u>Instrumentation and Methodologies</u>
COURSE CREDIT HOURS	<u>3 2 : 4</u> Credits Lec Lab

I. **Catalog Description**

Presents fundamentals of the technical and clinical aspects of radiation therapy. Includes principles of equipment operation, concepts of quality assurance instruction in medical imaging and miscellaneous procedures. A grade of a "C" or better is required to take the next course. **(2:4). Lab fee.**

II. **Course Objectives**

Upon satisfactory completion of this course, the student will be able to:

- A. Describe the components and the operation of a simulator, to include the radiographic, fluoroscopic, and CT units.
- B. Analyze the relationships of factors affecting image contrast, density, and resolution to determine optimal image quality.
- C. Apply techniques to enhance image details.
- D. Apply techniques to reduce image distortion.
- E. Select the most appropriate grid, film, and screen.
- F. Calculate penumbra, magnification factor, and percent magnification.
- G. Compare various films and intensifying screens available for portal localization and verification in radiation oncology.
- H. Describe the factors associated with digital image processing, display, and image data storage.
- I. Formulate a plan for darkroom safe light illumination.
- J. Discuss the possible causes and health implications of darkroom chemical sensitivity.
- K. Discuss the effects of processing and storage on image quality.
- L. Determine artifact types, cause, and preventive measures needed.
- M. Compare methods of silver recovery.
- N. Describe Occupational Safety and Health Administration (OSHA) standards affecting processing of film.
- O. Explain the basic principles of image formation for each of the following modalities: CT, MRI, Ultrasound, and Nuclear Medicine.
- P. Describe various safety and hazard procedures and policy standards.

III. **THECB Learning Outcomes (WECM)**

- 1. Explain the operation of radiation therapy treatment units.
- 2. Describe the benefits and application of a quality assurance program.
- 3. Explain x-ray production, including technical factors.

IV. Evaluation

A. Methods:

1. Homework and quizzes
2. Unit examinations
3. Comprehensive final examination

B. Grading Scale:

93 - 100 = A
85 - 92 = B
75 - 84 = C
74 and below = F

V. Disability Statement (American with/Disabilities Act [ADA])

EPCC offers a variety of services to persons with documented sensory, mental, physical, or temporary disabling conditions to promote success in classes. If you have a disability and believe you may need services, you are encouraged to contact the Center for Students with Disabilities to discuss your needs with a counselor. All discussions and documentation are kept confidential. Offices located: VV Rm C-112 (831-2426); TM Rm 1400 (831-5808); RG Rm B-201 (831-4198); NWC Rm M-54 (831-8815); and MDP Rm A-125 (831-7024).

VI. 6 Drop Rule

Students who began attending Texas public institutions of higher education for the first time during the Fall 2007 semester or later are subject to a 6-Drop limit for all undergraduate classes. Developmental, ESL, Dual Credit and Early College High School classes are exempt from this rule. All students should consult with their instructor before dropping a class. Academic assistance is available. Students are encouraged to see Counseling Services if dropping because exemptions may apply. Refer to the EPCC catalog and website for additional information.