

Virginia Western Community College

ROC 125

Pre-Clinical Techniques

Prerequisites

None

Course Description

This course focuses on basic technical skills in preparation for patient set up and treatment in the clinical setting. Emphasis will be on simulation and treatment parameters. The student will gain an understanding of basic technical and patient care skills through phantom and lab work prior to direct contact.

Semester Credits: 2

Lecture Hours: 2

Lab/Clinical/Internship Hours: 0

Required Materials

Textbook:

Principles and Practice of Radiation Therapy. Washington, C. and Leaver, D. (2016). 4th Edition.
ISBN: 9780323287524

Radiation Therapy Essentials Board Preparation Tool. Vann, Arazie and Sutton. (2010).
RadOnc Publications. ISBN: 9780615416656

Other Required Materials:

Radiation Oncology *Clinical Handbook*

Course Outcomes

At the completion of this course, the student should be able to:

- Demonstrate proper manipulation and operation of treatment equipment
- Demonstrate proper radiation safety practices and procedures
- Identify appropriate referral channels
- Practice basic patient care skills for patients undergoing radiation therapy treatments
- Participate in lab demonstrations of pre-clinical concepts for performing radiation treatments
- Demonstrate an understanding of the construction of radiation therapy treatment Devices
- Develop an understanding of the importance of equipment and patient safety
- Develop an understanding of the emotional and physical needs of a cancer patient.

Topical Description

Unit I: Handouts

- Syllabus
- Basic Terminology
- Common Radiation Therapy Terms
- Definitions
- Directional Terms

Unit II: Explain Terminology

- Commonly Used Terms
- Definitions
- Gantry and Location of Angles (0, 90, 180, 270)
- Identifying Fields (LAO, LPO, RAO, RPO)
- Planes/Contours
- Typical Clinical Components
- Field Size

Unit III: Parallel-Opposed Fields

- Calculating Opposed Gantry Angles
- Palliation vs. Curative
- Patient Marks
- Patient Set-ups, Positioning, Headrests/Immobilization Devices
- Bones/ Terminology and Bony Landmarks

Unit IV: Treatment Record and Consent

- Treatment Chart: Prescription, Diagrams, Field Identification, Elapsed Days
- EMR
- RADS vs. cGy
- Consent
- Introduce IFDs

Unit V: Depths and IFDs

- AP for set-up
- Calculating PA SSDs with an AP for set-up
- Calculating SSDs given depth of fields
- Calculating field size at different depths
- Time in the classroom to practice these concepts

Unit VI: Calculating Collimator Angles

- What happens to x and y when collimator is turned?
- Photons and Dmax
- MLC
- Asymmetric Jaws
- Maximum Machine Field Sizes
- Wedges
- Emergency Hand Pendant
- Machine Power Outages

Unit VII: Electrons

- Cone Safety
- Electron Contamination (how far must cutout be from patient?)
- Lead Strips
- Depth of Penetration for Electrons
- Creating a Personal Cutout
- Mould Room Safety
- Types and Purpose of Bolus
- Bolus Materials
- Obtaining SSDs with a Bolus
- Construct a Bolus in the classroom

Unit VIII: Machine Interlocks

- IVDs
- Film Badges
- Treatment Door
- Imaging

Unit IX: Hand Pendant

- Display Screen
- Time outs/Identifying the correct patient-2 methods
- Department Flow
- Referrals
- Scope of Practice of a Radiation Therapist
- Code of Ethics

Unit X: Clinical

One Hour of Supervised Time in Clinical with Faculty

Unit XI: Presentations

- Project Presentations
- Radiation Oncology Program Handbook

Unit XII: Review and Expectations

- Review Student Handbook Regarding Clinical
- Spring Clinical Expectations/Clinical Rotation Schedule
- Clinical Grading/Objectives/Forms
- Review Task Analysis
- Suggestions for Clinical Comps
- What to Expect

Note to Instructors