Virginia Western Community College
ROC 145
Quality Improvement

Prerequisites
ROC 110

Course Description
Methods for performing various quality assurance tasks will be discussed, including the medical record component, as well as, standards and specifications of therapeutic equipment. The student will acquire the knowledge and ability to recognize inaccuracy of treatment delivery. Warm up guidelines will be reviewed. A research project will be included.

Semester Credits: 2 **Lecture Hours: 2** **Lab/Clinical/Internship Hours:** 0

Required Materials

Textbook:
1.Washington, C. and Leaver, D. (2016). Principles and Practice of Radiation Therapy. (4th ed.) Mosby Co. IBSN:978-0-323-28752-42.
2. Comprehensive Quality Assurance for Radiation Oncology: Report of AAPM Radiation Therapy Committee Task Group Report #40 and #66. Click on the links to view/print: AAPM Task Group 40 (41 pages) and AAPM Task Group 66 (31 pages)
3.McDermott, P. and Orton, C. (2010). The Physics and Technology of Radiation Therapy. Medical Physics Publishing IBSN:978-1-930524-32-3 (hard cover) 978-1-930524-44-7 (soft copy)
4*Safety is No Accident*-ASRT document, click on the following to view/print: Safety is No Accident-ASRT

Other Required Materials:
REFERENCED COURSE MATERIAL: 1.Khan, Faiz (2009). The Physics of Radiation Therapy (4th ed). Lippincott Williams and Wilkins. IBSN: 978-0-7817-8856-4

Course Outcomes

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

1. Describe the primary goal of a QA program.
2. Discuss the process for collecting data for ongoing data evaluation and the evaluation process.
3. Discuss the importance of chart accuracy.

4. Define recommended checking frequency for various components of the chart.
5. Discuss the importance of machine checks and warm-up procedure.
6. Discuss the necessity for proper documentation of equipment function.
7. Explain the importance of audio and visual communication.
8. Describe the types, function and check techniques for communication devices.
9. Develop a research project specific to quality improvement in radiation oncology.

Topical Description

Week One	Quality Improvement in the Radiation Oncology Department	**Washington and Leaver**- Chapter 19 **AAPM Report #46**- Pages 585-587, 614-615 (definitions) Power Point #1
Week Two	Treatment Delivery	**Washington and Leaver**- Chapter 7 Power Point #1
Week Three	Charts and Patient Identification	**Washington and Leaver**- Pages 37-38; 89-90 Medical Records, Pages 161-163 The Patient, Pages 156-161, Chapter 26 Power Point #1
Week Four	Quality Improvement Team	**AAPM Report # 46**- pages 612-614 Power Point #2
Week Five	The Radiation Therapist and Education	**Washington and Leaver** – page 32 (Education and Certification); page 341 (Accrediting Agencies); pages 368-369 (The Joint Commission) Power Point #2
Week Six	Chart Checks, Informed Consent and Clinical Trials	**AAPM Report #46**- pages 607-611 Power Point #3 **Washington and Leaver**- Pages 16-18, Clinical Trials Power Point #4
Week Seven	Immobilization Devices	**Washington and Leaver**- Pages 459-463 **AAPM Report #46**-page 596 Power Point #5

Week Eight	Filming/Imaging, Patient Communication Devices and Treatment Accessories	**AAPM Report #46**- pages 611-612 Power Point #6 **Washington and Leaver**- Page 171-Patient Monitoring Systems Power Point #7 Power Point #8
Week Nine	Equipment Safety, Faults and Interlocks	Power Point #8a Power Point #8b Power Point #8c **Machine Interlock Document**- located under course documents **Safety is No Accident** document
Week Ten	Linear Accelerator QA and Safety	**AAPM Report #46**- pages 587-592 Power Point #9 **The Physics & Technology of Radiation Therapy**-Chapter 18
Week Eleven	CT/Simulator QA	Conventional Simulation **AAPM Report #46**- page 592 Power Point #10 CT Simulation **AAPM Report #66**- pages 2764-2775 Power Point #10a
Week Twelve	Daily Warm-up, Preventative Maintenance	Power Point #11 Power Point #12
Week Thirteen	Brachytherapy	**AAPM Report #46**- pages 599-607 Power Point #13
Week Fourteen	Treatment Planning, Dosimetry and IVDs	**AAPM Report #46**- pages 593-599 Power Point #14
Week Fifteen	Culture of Safety in Radiation Oncology	**Washington and Leaver –** Chapter 18 Power Point #15

Notes to Instructors