Virginia Western Community College
ROC 225
Emerging Technologies

Prerequisites
Successful completion of ROC 232.

Course Description
This course focuses on new and advanced techniques in Radiation Oncology and emphasizes emerging procedures in simulation and treatment relative to tumor site and modality.

Semester Credits: 1 **Lecture Hours: 1** **Lab/Clinical/Internship Hours: 0**

Required Materials

Textbook:
Principles and Practice of Radiation Oncology. Washington, C. & Leaver, D. (2010). 3rd Edition. Mosby Co. ISBN: 9780323053624

Other Required Materials:

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

- Explain the need for Image Guided Radiotherapy in the Radiation Oncology Arena
- Develop a better understanding of recent advances in the field such as OBI, IMRT, Rapid Arc, and Cone Beam CT.
- Discuss highly advance treatment options such as proton therapy, cyber knife, gamma knife and stereotactic radiotherapy
- Discuss the different types of modality options that may be used in the future to enhance the simulation process
- Understand the need for the radiation therapist to become a lifelong learner in the ever evolving field of radiation therapy

Topical Description

1	Unit I	Introduction: Past, Present and Future
2	Unit II	IGRT / IMRT
3	Unit III	Cone Beam / Respiratory Gating / Calypso
4	Unit IV	Arc Therapy
5	Unit V	Tomotherapy
6	Unit VI	Cyber Knife
7	Unit VII	Proton Therapy
8	Unit VIII	Gamma Knife
9	Unit IX	SIR Spheres
10	Unit X	Stereotactic Radiosurgery
11	Unit XI	Culture of Safety in Radiation Therapy

Note to Instructors