

Syllabus: Physics of Radiation Therapy for Residents 2009-2010**Time of Meeting: Thursdays from 7:30 – 8:30 AM****Room: WWW 201****Text: *Physics of Radiation Therapy*, 3rd ed., Faiz M. Khan. Lippincott Williams & Wilkins, Philadelphia, 2003.**

Date	Chapter	Instructor
09-Jul-09	The Atom	Guo
16-Jul-09	Radioactivity and decay	Guo
23-Jul-09	Treatment Planning	Kim
30-Jul-09	Basic Physics of X-ray Beam Production	Guo
06-Aug-09	Generation of Beams	Guo
13-Aug-09	Linacs	Carlson
20-Aug-09	Linac Collimation Systems and Other Teletherapy	Carlson
27-Aug-09	Interactions of X-and Gamma-rays with Matter	Carlson
03-Sep-09	Attenuation of Photon Beams	Carlson
10-Sep-09	Interactions of Particulate Radiation	Carlson
17-Sep-09	Monoenergetic / Polyenergetic Bremsstrahlung Beams	Ahmad
24-Sep-09	Dose Quantities and Units	Ahmad
01-Oct-09	Calculation of Dose	Ahmad
08-Oct-09	Dose Output Calibration	Ahmad
15-Oct-09	Clinical Dosimetry	Ahmad
22-Oct-09	External Beam Dosimetry Concepts (Part I)	Fan
29-Oct-09	External Beam Dosimetry Concepts (Part II)	Fan
05-Nov-09	ASTRO	
12-Nov-09	System of Dose Calculations	Fan
19-Nov-09	Translation of Computerized Planning	Fan
26-Nov-09	Thanksgiving	
03-Dec-09	Computerized Treatment Planning (TP) Strategies	Fan
10-Dec-09	Surface Corrections and Heterogeneity Calculations	Fan
17-Dec-09	Adjoining Fields and Special Dosimetry Problems	Fan
24-Dec-09	Christmas	
07-Jan-10	Basic Characteristics	Deng
14-Jan-10	Treatment Planning with Electrons	Deng
21-Jan-10	Overview of QA in Radiation Therapy	Deng
28-Jan-10	Linac and Imaging QA	Deng
04-Feb-10	Informatics	Deng
11-Feb-10	3D-CRT Concepts, Volumetric (3D-CRT) vs. Nonvolumetric	Chen

Date	Chapter	Instructor
18-Feb-10	Volumetric Beam Placement	Chen
25-Feb-10	Positioning and Immobilization Methods and Devices	Chen
04-Mar-10	IMRT Delivery Systems	Chen
11-Mar-10	Dose Prescription and Inverse Planning	Chen
18-Mar-10	IMRT QA	Chen
25-Mar-10	SRT Delivery and Positioning	Bond
01-Apr-10	SRS Dose Prescription and Planning, QA	Bond
08-Apr-10	Other Special Procedures (TSET, TBI)	Bond
15-Apr-10	Radioactive Sources and Calibration	Bond
22-Apr-10	Calculations of Dose Distributions	Bond
29-Apr-10	Implantation Techniques	Bond
06-May-10	Systems of Implant Dosimetry	Bond
13-May-10	QA and Safety	Bond
20-May-10	Radiopharmaceutical Physics (Double Lecture)	Bond
27-May-10	Particle Therapy	Chu
03-Jun-10	Radiography Fundamentals	Chu
10-Jun-10	CT and PET	Chu
17-Jun-10	MRI and Ultrasound	Chu
24-Jun-10	Radiation Safety and Shielding (Double Lecture)	Bohan