

DRAFT

2017-2018 Syllabus as of July 21, 2017

Physics of Radiation Therapy for Resident Physicians

Time of Meeting: Thursdays from 7:05 – 8:05 AM

Room: Smilow Conference Room LL 505

Textbook: Physics of Radiation Therapy, Faiz M. Khan

20-Jul-17	Orientation: Treatment Planning	Kim
27-Jul-17	Atomic and Nuclear Structure: The Atom	Butkus
3-Aug-17	Beam Production: Basic Physics of X-Ray Beam Production	Butkus
10-Aug-17	Beam Production: Generation of Beams	Butkus
17-Aug-17	Treatment Machines: Linacs	Carlson
24-Aug-17	Treatment Machines: Linac Collimation Systems and Other Teletherapy	Carlson
31-Aug-17	Radiation Interaction: Interactions of X-and Gamma-rays with Matter	Carlson
7-Sep-17	Radiation Interaction: Attenuation of Photon Beams	Carlson
14-Sep-17	Radiation Interaction: Interactions of Particulate Radiation	Carlson
21-Sep-17	Beam Quality & Dose: Monoenergetic / Polyenergetic Bremsstrahlung Be	Kamath
28-Sep-17	Beam Quality & Dose: Dose Quantities and Units	Kamath
5-Oct-17	Radiation Measurement & Calibration: Calculation of Dose	Tien
12-Oct-17	Radiation Measurement & Calibration: Dose Output Calibration	Tien
19-Oct-17	Radiation Measurement & Calibration: Clinical Dosimetry	Tien
26-Oct-17	Photon EBRT: Dosimetry Concepts (Part I)	Lincoln
2-Nov-17	Photon EBRT: Dosimetry Concepts (Part II)	Lincoln
9-Nov-17	Photon EBRT: System of Dose Calculations	Lincoln
16-Nov-17	Photon EBRT: Computerized Planning	Liu
23-Nov-17	Thanksgiving Week	
30-Nov-17	Photon EBRT: Computerized Treatment Planning Strategies	Liu
7-Dec-17	Photon EBRT: Surface Corrections and Heterogeneity Calculations	Liu
14-Dec-17	Resident Interview	
21-Dec-17	Photon EBRT: Adjoining Fields and Special Dosimetry Problems	Liu
28-Dec-17	Resident Interview	
4-Jan-18	Electron EBRT: Basic Characteristics	Deng
11-Jan-18	Electron EBRT: Treatment Planning	Deng
18-Jan-18	EBRT QA: Overview of QA in Radiation Therapy	Deng
25-Jan-18	EBRT QA: Linac and Imaging QA	Deng
1-Feb-18	EBRT Treatment Setup: Immobilization & Positioning	Liu
8-Feb-18	3DCRT: Concepts & Treatment Planning	Chen
15-Feb-18	3DCRT: Plan Evaluation & Comparison	Chen
22-Feb-18	IMRT: Concepts & Delivery Systems	Chen
1-Mar-18	IMRT: Dose Prescription & Inverse Planning	Chen
8-Mar-18	Resident In-Training Exam	
15-Mar-18	IMRT: QA	Chen
22-Mar-18	Special Procedure: Cranial SRS	Bond
29-Mar-18	Special Procedure: SBRT	Bond

5-Apr-18	Special Procedure: TBI & TSET	Bond
12-Apr-18	Brachy: Radioactivity, Decay, Radioactive Sources & Calibration	Bond
19-Apr-18	Brachy: Calculations of Dose Distributions	Bond
26-Apr-18	Brachy: Implantation Techniques	Bond
3-May-18	Brachy: Systems of Implant Dosimetry	Bond
10-May-18	Brachy: QA and Safety	Bond
17-May-18	Radiopharmaceutical Physics	Bond
24-May-18	Particle Therapy: Delivery, Planning & Biology	Carlson
31-May-18	RT Imaging: Radiography Fundamentals / Informatics	Hodefi
7-Jun-18	RT Imaging: CT and PET	Hodefi
14-Jun-18	RT Imaging: MRI and Ultrasound	Hodefi
21-Jun-18	Radiation Safety and Shielding	Bohan
28-Jun-18	Radiation Incidents & Bioterrorism Response Training	Bohan

R. Nath July 21, 2017

