

MEDICAL PHYSICS I, PHYS 4430, CRN#52126

Department of Physics and Astronomy/Department of Radiation Oncology (CNSM/COMLS)

Fall 2018

COURSE SCHEDULE

Week	Dates	Topic	Instructor	Homework
1	08/28	Introduction to HSC and tour Radiation Oncology	DS	
2	09/04	Basic physics of radiation (Ch. 2-3I)	EP	Ch.2:3, 4, 5, 6, 8; Ch.3:1, 2, 4, 6, 8, 11, 12
3	09/11	Interactions of radiation (Ch. 4I, Ch.2-3T)	DS	Ch.4I: 3,5,6,9,11; Ch.3T: 4,5
4	09/18	Radiation quantity and quality, f-factor (Ch. 6I, 7I)	DS	Ch.6I: 1,3,5,6,12; Ch.7I: 3,5
5	09/25	Digital images and aspects of image quality (Ch.10T, Ch. 16I,17I)	DS (KK)	Ch.10T: 3,4; Ch.16I: 3,4; Ch.17I: 1,3
6	10/02	Machines for producing radiation (Ch. 5I, Ch. 4T)	DP	HW set document
7	10/09	Projection radiography (Ch. 13I)	DP (KK)	HW set document
8	10/16	Computed tomography (Ch. 15I)	NS (KK)	HW set document
9	10/23	MIDTERM EXAM	DS	
10	10/30	Measurement of ionizing radiation (Ch. 8I, Ch. 5T)	EP	Ch.5T: 4,6,9, 12 Ch. 8I: 1,2,3, 5
11	11/06	Calibration of Megavoltage beams of X-rays and electrons (Ch. 6T)	DP	HW set document
12	11/13	External beam treatment planning and delivery. TCP and NTCP concepts (Ch. 9T)	NS	Ch. 9T: 2-5, 7
13	11/20	External beam dose calculation for photon and electrons (Ch. 7T, 8T)	DP	HW set document
14	11/27	Tumor targeting, image guided and adaptive radiotherapy (Ch. 12T)	NS	Ch. 12T: 1-5 + additional Q set
15	12/04	Radiation Oncology Informatics (Ch. 10I, Ch. 14T)	NS	Ch. 10I: 3, 4, 6 Ch. 14T: 3, 5, 7
16	12/11	FINAL EXAM	DS	

"I" for Medical Imaging Physics textbook

"T" for Hendee's Radiation Therapy Physics textbook