2023 Imaging Physics Course Syllabus

Week	Date	Торіс	RSNA/AAPM Module	Faculty			
		FUNDAMENTALS					
1	5-Jan-23	Intro to Radiography (Interactions/X-ray tubes)	Atoms, Radiation and Radioactivity X-Ray Tubes and Spectra	MA			
2	12-Jan-23	Intro to Radiography (Interactions/Terminology)	Interactions of Radiation with Tissue Radiation Measurements and Units	MA			
3	19-Jan-23	Intro to Radiography (Geometry/Contrast/Technique)	Interactions of Radiation with Tissue Radiation Measurements and Units	MA			
4	26-Jan-23	Digital X-Ray Imaging	Radiograhic Systems, Digital X-Ray Imaging, Radiographic Image Receptors	MA			
			N TO MODALITIES				
5	2-Feb-23	Intro to CT	CT Systems, Rad Dose in CT	DZ			
6	9-Feb-23	NO CLASS	Ski Day!				
7	16-Feb-23	Intro to Mammography	Mammographic Systems	КК			
8	23-Feb-23	Intro to Fluoroscopy	Fluoroscopy Systems	JM			
			ISPLAY AND PROCESSING				
9	2-Mar-23	Image Perception & Display	Image Perception and Display	JM			
10	9-Mar-23	PACS Image Processing and Reconstruction	Image Processing, Reconstruction & PACS	DZ			
11	16-Mar-23	Review Session - Q&A (Assign Take Home Quiz 1)	JM			
		RADIATION BIOLOG	Y AND RADIATION RISK				
12	23-Mar-23	Basic Radiation Biology I	Basic Radiation Biology	КК			
13	30-Mar-23	Basic Radiation Biology II & Rad Protection	Basic Rad Bio & Fundamentals of Radiation Protection	КК			
14	6-Apr-23	NO CLASS	Research Day!				
15	13-Apr-23	Radiation Effects	Radiation Effects	КК			
16	20-Apr-23	Radiation Risks and Estimating Cancer Risk	Radiation Dose and Risk, Estimating Cancer Risk from Imaging Procedures	кк			
		IMAGING MODALITIES					
17	27-Apr-23	CT Systems	CT Systems	DZ			
18	4-May-23	CT Image Quality, Dose and Protocols	CT Image Quality and Protocols Radiation Dose in CT	DZ			
19	11-May-23	NO CLASS	Beach Day!				
20	18-May-23	CT Imaging and Rad Prot of Ped Patient	Image Gently: CT Imaging and Radiation Protection of Pediatric Patient	DZ			
21	25-May-23	Basic Ultrasound Imaging and Display	Basic Ultrasound Imaging and Display	Mſ			
22	1-Jun-23	Interaction of US Tissue and Doppler	Interaction of US Tissue and Doppler	JM			
23	8-Jun-23	Image Quality & Dose in Rad and Mammo	Image Quality and Dose in Radiography Mammography Image Quality and Dose	DZ			
24	15-Jun-23	Fluoroscopy Lab	Radiation Dose and Safety in Interventional Radiology	JM+AW			
25	22-Jun-23	Mammo Clinical Lecture		Chen			
26	29-Jun-23	Basic Nuclear Physics: Decay and Interactions with Matter	Atoms, Radiation, and Radioactivity Interactions of Radiation and Tissue	JM			

		Review Self-Study: Take-Home Quiz 2	
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Week	Date	Торіс	RSNA/AAPM Module	Faculty	
27	6-Jul-23	US Artifacts		Dighe	
28	13-Jul-23	Radiation Detection Instrumentation and Radiation Safety in NM Practice	Radiation Detection Instrumentation in NM Practice	RM	
29	20-Jul-23	SPECT and SPECT/CT	SPECT / SPECT-CT / Image Quality	DV	
30	27-Jul-23	Radioisotopes, Radiopharmaceutical, and Dosimetry	Radioisotopes and Radiopharmaceuticals Radionuclide Dosimetry and Nuclear Regulations	ΜΑ	
31	3-Aug-23	PET and PET/CT	PET/PET-CT/Image Quality	DV	
32	10-Aug-23	Nuclear Regulations	Radionuclide Dosimetry and Nuclear Regulations	11	
33	17-Aug-23	Radioisotope Safety (RISE Concepts)	Radioisotopes and Radiopharmaceuticals	11	
34	24-Aug-23	Clinical NM Artifacts		SB	
35	31-Aug-23	Review Session - Q&A (Assign Take Home quiz 3)		MA	
		MAGNETIC RESONANCE IMAGING			
36	7-Sep-23	MRI: Basic Physics I	Basic Principles of Nuclear Magnetic Resonance	JO	
37	14-Sep-23	MRI: Basic Physics 2 and Hardware	Instrumentation	JO	
38	21-Sep-23	MRI: Image Formation	Image Formation	JO	
39	28-Sep-23	MRI: Basic Imaging Sequences	Pulse Sequences	SL	
40	5-Oct-23	MRI: Advanced Sequences	Special Acquisition Methods/Gadolinium-based Contrast Agents	SL	
41	12-Oct-23	MRI: Imaging Features and Characteristics	Image Characteristics	JO	
42	19-Oct-23	MRI: Artifacts	Artifacts	JO	
43	26-Oct-23	MRI: Quality/Bioeffects/Safety MRI: Siting and Environmental Protection (self-study)	Quality/Bioeffects/Safety Siting and Environmental Protection	Oſ	
44	2-Nov-23	Review Session - Q&A	Assign Take Home quiz 4)	JO	

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