

Advanced MRI (EE 7310/BE 7310/ RAD 7310)**Spring 2005**

Day	Date	Description	Chapters
Mon	1/10/2005	Introduction, overview and review	Ch. 1,2
Wed	1/12/2005	Gyromagnetic ratio	Ch. 3
Fri	1/14/2005	Resonance, rotating frame	Ch. 3
Mon	1/17/2005	MLK Holiday	
Wed	1/19/2005	Bloch Equations	Ch. 3
Fri	1/21/2005	No Class	
Mon	1/24/2005	Bloch Equations II	Ch. 3
Wed	1/26/2005	Chemical shift	Ch. 3
Fri	1/28/2005	Lab 1: FFTs	
Mon	1/31/2005	Relaxation, T1 and T2	Ch. 3
Wed	2/2/2005	Signal Detection	Ch. 3
Fri	2/4/2005	Free induction signal, spin echoes	Ch. 4
Mon	2/7/2005	Applied magnetic gradient fields, gradient echoes	Ch. 4
Wed	2/9/2005	More echoes	Ch. 4
Fri	2/11/2005	Lab 2: MRI Safety and introduction to scanner	
Mon	2/14/2005	Test 1	
Wed	2/16/2005	Fourier and Radon Transforms	Ch. 2
Fri	2/18/2005	Signal localization - slice select	Ch. 5
Mon	2/21/2005	Presidents Day	
Wed	2/23/2005	Spatial signal encoding	Ch. 5
Fri	2/25/2005	K-space, trajectories	Ch. 5
Mon	2/28/2005	MR imaging techniques: 1D, 2D, 3D	Ch. 5
Wed	3/2/2005	Signal sampling	Ch. 5
Fri	3/4/2005	MR image reconstruction I	Ch. 6
Mon	3/7/2005	MR image reconstruction II	Ch. 6
Wed	3/9/2005	Pulse sequences and imaging techniques	Ch. 7
Fri	3/11/2005	Lab 3: Computer simulations	
Mon	3/14/2005	Spring	
Wed	3/16/2005	Break	
Fri	3/18/2005	No Class	
Mon	3/21/2005	Pulse sequences and imaging techniques	Ch. 7
Wed	3/23/2005	Image resolution, noise and artifacts	Ch. 8
Fri	3/25/2005	Image resolution, noise and artifacts	Ch. 8
Mon	3/28/2005	Test 2	
Wed	3/30/2005	Lab 4: RF coil design	
Fri	4/1/2005	Fast imaging techniques	Ch. 9
Mon	4/4/2005	Fast imaging techniques	Ch. 9
Wed	4/6/2005	Diffusion imaging	
Fri	4/8/2005	Spectroscopy	
Mon	4/11/2005	Quantitative MRI	
Wed	4/13/2005	Lab 5	
Fri	4/15/2005	Flow effects, angiography	
Mon	4/18/2005	Dynamic contrast MRI	
Wed	4/20/2005	Student Presentations	
Fri	4/22/2005	Student Presentations	
Mon	4/25/2005	Student Presentations	
Wed	4/27/2005	Review for Final	
Fri	4/29/2005	FINAL 8-10am	