

Tentative Schedule
ELEN 689-604 JI, Spring 2005
Advanced Signal Processing for Medical Imaging

Week	Date	Topics	Quiz	Reference
1	1/18	Introduction to Medical Imaging Science	general	Notes
	1/21	Review of math & Physics		
2	1/25	X-ray CT & Randon Transform, Slice Projection Thereom	Math/phsic	Webb: 1.10-11 Liang: 2.6
	1/28	Back-Projection & inverse Randon Transf.		
3	2/1	Advanced CT applications	Random transform	Webb: 1.12-15 Liang: 1, 3
	2/3	MR signal generation		
4	2/8	MR spatial encoding & receiving		Liang: 3, 5
	2/10	HEMBS meeting, no class		
5	2/15	2-D Rectangular Sampling & Image Recon	MR basics	Note, Liang: 6
	2/17	2-D Polar Sampling & Image Recon		
6	2/22	Fast Imaging: Reduced Sampling & Recon	2-D MR	Note, Liang: 9,10
	2/24	Multidimensional Signal Sampling/Recon		
7	3/1	Application of Fast Medical Imaging	Multi-dim. Sampling	Note, Webb: 3
	3/3	Ultrasound Imaging: signal generation/detection		
8	3/8	Review for midterm	Fast MR	
	3/10	Midterm		
9	3/15	Spring Break		
	3/17	Spring Break		
10	3/22	Array-Signal generation and reconstruction	US & Midterm	Note Webb: 3.5
	3/24	Phased-array in Ultrasound Imaging		
11	3/29	Phased-array in MRI	Phased-array	Note
	3/31	Medical Image Processing		
12	4/5	Medical Image Processing	Imag. Proc	Note

	4/7	3-D Signal Visualization: volume rendering		
13	4/12	Medical Imaging Analysis: Introduction	Viz. & Analysis	Note
	4/14	Image Segmentation		
14	4/19	Image Registration: Metric, Transform	Image Registration	Note
	4/21	Multi-variable Optimization for Imag Regis.		
15	4/26	Project Presentation		
	4/28	Review for final exam		
16	5/3	Final Exam		
Happy Holidays!				