				PHY973 spring 2004		
				Probes of nanostructure in complex materials		
Week	**Day**	**Date**	**Lecture**	**Title**	**Instructor**	
	Techniques based on scattering					
1	Tu	Jan, 13th	1	Basic concepts of scattering	Billinge	
	Th	Jan, 15th	2	Scattering experiments	Billinge	
2	Tu	Jan, 20th	3	Correlation functions	Duxbury	
	Th	Jan, 22nd	4	G(r)/S(Q) approach/SANS SAXS	Duxbury	
3	Tu	Jan, 27th	5	Measurement/data analysis/	Billinge	
	Th	Jan, 29th	6	modelling of total scattering	Billinge	
4	Tu	Feb, 3rd	7	S(Q,w), inelastic/quasielastic scattering	Duxbury	
	Th	Feb, 5th	8	measuring phonons/magnons	Duxbury	
5	Tu	Feb, 10th	9	crystallography/phase problem	Billinge	
	Th	Feb, 12th	10	diffuse scattering from single crystals	Billinge	
6	Tu	Feb, 17th	11	coherence volume effects	Duxbury	
	Th	Feb, 19th	12	holography/image reconstruction	Duxbury	
7	Tu	Feb, 24th	13	imaging in the TEM	Billinge	
	Th	Feb, 26th	14	x-ray imaging techniques	Billinge	
	Techniques based on spectroscopy					
8	Tu	Mar, 2nd	15	Introduction to spectroscopy	Duxbury	
	Th	Mar, 4th	16	IR spectroscopy	Duxbury	
	Tu	**Mar, 9th**		**Spring Break**		
	Th	**Mar, 11th**		**Spring Break**		
9	Tu	Mar, 16th	17	raman scattering	Billinge	
	Th	Mar, 18th	18	FRET	Billinge	
10	Tu	Mar, 23rd	19	NMR/NQR/ESR/Mossbauer/MuSR	Duxbury	
	Th	Mar, 25th	20	NMR/NQR/ESR/Mossbauer/MuSR	Duxbury	
11	Tu	Mar, 30th	22	XAFS/XANES	Billinge	
	Th	Apr, 1st	21	XAFS/XANES	Billinge	
	Scanning probes					
12	Tu	Apr, 6th	23	Introduction to quantum tunneling	Duxbury	
	Th	Apr, 8th	24	STM	Duxbury	
13	Tu	Apr, 13th	25	MFM/AFM/CFM/FIM	Billinge	
	Th	Apr, 15	26	MFM/AFM/CFM/FIM	Billinge	
14	Tu	Apr, 20th	27	FIM/transport/thermodynamic measures	Duxbury	
	Th	Apr, 22nd		FIM/transport/thermodynamic measures	Duxbury	
15	Tu	Apr, 27th	28	Final project	Bill/Dux	
	Th	Apr, 29th	29	Final project	Bill/Dux	