

Syllabus - Geoscience 777 - Spring 2014 - Version 2/8/14

Week#	Week of	Topic/s	PPT#	Problem Set Assigned (due one week later)	Lab Exercise (week performed) (due one week later)
1	01/21/14	Introduction: What is 777? Electron-sample interactions	0 20		
2	01/28/14	Electron-optical Column Historical Background (optional)	30 10	Monte Carlo (CASINO 2.48)	Intro to S3400 SEM: column set up; SEI; BSE
3	02/04/14	EDS Image Processing (optional)	40 111	EDS Simulation I	Intro to NSS EDS; Deadtime, artifacts
4	02/11/14	Vacuum VP-SEM/ESEM Low Voltage SEM	31 35 36	EDS Simulation II	SEM of complex material; EDS
5	02/18/14	Image Acquisition Advanced topics in SEM and EDS (including mapping)	110 120	EDS Simulation III	VP-SEM operation; ESED vs BSED
6	02/25/14	EBSD CL	140 112	Image J exercise	EBSD Demo
7	03/04/14	WDS I: Spect, xtals, PHA	50	Spectro Xtals Exercise	SEM-EDS Lab Exam
8	03/11/14	WDS II: Interferences, pk shifts, bkg models, comparison EDS vs WDS	51	ID of peaks in WDS scan	Intro to PfE: Peaking, PHA, wavescans
	03/18/14	SPRING BREAK			
9	03/25/14	Standards Matrix correction	75 60	ZAF exercise	Pulse Height Analysis
10	04/01/14	Specimen Preparation Thin Films	130 100	Virtual WDS	Analysis of unknown
11	04/08/14	Light Elements Trace elements	90 80	GMR Film exercise	Trace element analysis
12	04/15/14	Particles Difficult materials: glass, calcite, etc	160 170		Time Dependent Intensities
13	04/22/14	EPMA Summary: Accuracy and Errors	70		EPMA Lab Exam
14	04/29/14	SIMS			Field Trip
15	05/06/14	Atom Probe			Field Trip