

Syllabus - Geoscience 777 - Spring 2018 - Versionv3/10/2018

Week of	Topic/s	PPT#	Problem Set Assigned (due one week later)	Lab Exercise (week performed) (due one week later)
01/23/18	Introduction: What is 777? Historical Background	0 10		
01/30/18	Electron-sample interactions	20	CASINO 1 (CASINO v 2.51)	Intro to S3400 SEM: column set up; SEI; BSE
02/06/18	Electron-optical Column Vacuum	30 31	CASINO 2	Imaging exercise (lava, high/low Z)
02/13/18	Image Acquisition (includes low voltage) VP-SEM/ESEM	110 35	Image J exercise	VP SEM imaging (include ESED and BSED)
02/20/18	EDS I: Intro to EDS	40	EDS Simulation I (DTSA II)	Intro to AZtec EDS; Deadtime, artifacts
02/27/18	EDS II: Quant	41	EDS Simulation II (DTSA II)	Standard vs standardless Quant
03/06/18	EDS III: Wrinkles in Quant	42	EDS Simulation III (DTSA II)	(Lab unavailable)
03/13/18	EBSD CL	140 112	Two Papers: Review Newbury'05/Burgess-06	EBSD; CL
03/20/18	WDS I: Spect, xtals, PHA	50	Spectro Crystals Ex.	Intro to PfE: Peaking, PHA, wavescans
03/27/18	Spring Break			
04/03/18	WDS II: Interferences, pk shifts, bkg models, comparison EDS vs WDS Standards	51 75	ID of peaks in WDS scan	WDS: Pulse Height Analysis
04/10/18	Trace elements Thin Films	80 100	Virtual WDS	WDS: Trace element analysis
04/17/18	Light Elements Specimen Preparation	90 60	GMR Film exercise	Time Dependent Intensities
04/24/18	Difficult materials: glass, calcite, etc Error Budget	170 70	TBD	Analysis of K497
05/01/18	X-ray Mapping Experiment writeup	TBW TBW	TBD	X-ray Mapping