

Course Outline
Quantitative X-ray Microanalysis:
Problem Solving using EDS and WDS Techniques
 June 11-15, 2012

5:00-8:00 **Sunday, June 10 (evening)**
 Registration (Whitaker Lobby)

Day One Monday, June 11
 8:30-8:40 Welcome
 8:40-8:45 Course Roadmap
 8:45-10:00 E-beam/Specimen Interactions and Monte Carlo
 10:00-10:20 Break
 10:20-12:00 X-ray Analysis: The Basics
 12:00 Lunch
 1:15-2:40 EDS: Good Spectrometry Practice
 2:40-3:00 Break
 3:00-5:00 Lab 1: EDS Instrumentation
 5:15 Dinner
 7:00-9:30 Practical X-ray Microanalysis – Part I
 Getting Good Data with Si (Li) and SDD EDS

Day Two Tuesday, June 12
 8:30-10:00 Wavelength-Dispersive Spectrometry
 10:00-10:20 Break
 10:20-12:00 Software Tools for Microanalysis
 12:00 Lunch
 1:15-3:00 Lab 2: Quantitative EDS Measurements
 3:00-3:20 Break
 3:20-4:30 Practical Aspects of Wavelength-Dispersive Spectrometry
 4:30-5:00 Open Discussion on Topics Covered So Far
 5:15 Dinner
 7:00-9:00 Lab 3: Quantitative WDS Measurements

Day Three Wednesday, June 13
 8:30-10:00 Special Samples 1: Particle Effects in EPMA Analysis
 10:00-10:20 Break
 10:20-12:00 Special Samples 2: Phi(rho-z) Method for Layered Samples, Particles, etc.
 12:00 Lunch
 1:15-3:30 Lab 4: Quantitative Analysis with EDS and WDS
 3:30-3:45 Break
 3:45-5:00 Lab 5: Student Problem Specimens – Best Analytical Practices
 6:30 Cocktail hour and banquet

Day Four Thursday, June 14
 8:30-9:15 Light Element Analysis
 9:15-10:15 Practical X-ray Microanalysis – Part II (Measurement Pitfalls)
 10:15-10:30 Break
 10:30-12:00 Practical X-ray Microanalysis – Part III (Statistics)
 12:00 Lunch
 1:15-3:30 Lab 6: Light Element Analysis
 3:30-3:45 Break
 3:45-5:00 Automatic Analysis: Peak Identification and Standardless Analysis
 5:15 Dinner
 7:00-9:00 Lab 7: Optimum Correction Methods for Quantitatively Analyzing Real-World Samples

Day Five Friday, June 15
 8:30-9:30 Analysis of Pernicious Samples (Rough Specimens, Beam Sensitive)
 9:30-10:00 Group Discussion
 10:00-10:20 Break
 10:20-11:00 The Analytical Report
 11:00-12:00 Future Directions in Instrumentation, Analysis, and Spectral Simulation
 12:00 Lunch (box lunches – Whitaker Lobby)

Note: All classes and labs will be held in Whitaker Lab

Disclaimer: The organizers reserve the right to change the instrumentation or sequence of lecture topics and to cancel lectures or substitute lecturers if necessitated by circumstances beyond their control. Updated 9/15/11.