

**Course Outline**  
**Problem Solving with SEM,**  
**X-ray Microanalysis, and Electron Backscatter Patterns**  
 June 14-18, 2010

5:00-8:00      **Sunday, June 13 (evening)**  
 Registration (Whitaker Lobby)

**Day One      Monday, June 14**  
 8:30-8:35      Welcome  
 8:35-10:00     Critical Concepts for Problem Solving  
 with SEM Imaging  
 10:00-10:20    Break  
 10:20-12:00    Lab: SEM Image Interpretation  
 12:00            Lunch  
 1:15-3:00      High Performance SEM  
 (Sources, Detectors)  
 3:00-3:30      Break  
 3:30-5:00      Lab: SEM High Resolution  
 5:30             Dinner  
 7:00-9:00      Lab: Student Problems I

**Day Two      Tuesday, June 15**  
 8:30-10:00     Problem Solving with EDS X-ray  
 Microanalysis  
 10:00-10:20    Break  
 10:20-12:00    Lab: EDS X-ray Microanalysis  
 12:00            Lunch  
 1:15-3:15      Lab: Monte Carlo Image Modeling  
 3:15-3:30      Break  
 3:30-5:00      Lecture/Lab: Making SEM Dimensional  
 Measurements (Including Stereo and  
 Application of Monte Carlo)  
 5:30             Dinner  
 7:00-8:15      Advanced Specimen Prep with Ion Beams  
 8:15-8:30      Demo: Specimen Prep with the FIB  
 8:30-9:30      Lab: Looking at the FIB Cuts

*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 9/15/09.*

**Day Three      Wednesday, June 16**  
 8:30-10:00     VPSEM/ESEM Imaging  
 10:00-10:30    Break  
 10:30-12:00    Lab: VPSEM/ESEM Imaging  
 12:00            Lunch  
 1:15-3:00      Lecture/Lab: Digital Image Processing  
 (NIH-IMAGE-J)  
 Break  
 3:00-3:30      Lab: Sample Preparation  
 3:30-5:00      Cocktail hour and banquet  
 6:30

**Day Four      Thursday, June 17**  
 8:30-10:00     Low-Voltage SEM/VPSEM/ESEM/  
 X-ray Microanalysis  
 10:00-10:30    Break  
 10:30-12:00    Lab: Low-Voltage SEM/VPSEM  
 ESEM/X-ray Microanalysis  
 12:00            Lunch  
 1:15-2:45      Electron Backscatter Diffraction  
 (EBSD)  
 Break  
 2:45-3:00      Lab: EBSD  
 3:00-5:00      Dinner  
 5:30             Lab: Student Problems II  
 7:00-9:30

**Day Five      Friday, June 18**  
 8:30-10:00     Problem Solving Live  
 10:00-10:30    Break  
 10:30-12:00    SEM/EDS/EBSP Problem Solving is  
 Just the Start: Where Do We Go From  
 Here?  
 12:00            Lunch  
 (box lunches – Whitaker Lobby)