TEAM 0.5

Core Status: new users must complete 2 training sessions and pass a sample exchange exam to work independently during Core sessions (regular work hours).
Flex Status: core users must complete 5 Core sessions and pass a driving test to work during Flex sessions (evening and weekend hours).

All TEAM 0.5 scheduling must be coordinated through Peter Ercius at Percius@lbl.gov. You may be assigned only two sessions per month.

CORE LICENSE

Safety
- ❑ Understand emergency shut-down procedure
- ❑ Demonstrate handling of the column valves
- ❑ Point out where emergency contact numbers are posted
- ❑ Know how to contact NCEM staff for support

Instrument preparation
- ❑ Show how to check basic vacuum functionality and target pressure values
- ❑   (Gun: 1, Liner: 18-20 and Octagon: < 10)
- ❑ Check Gun operate "ON" and extraction voltage "4500V"
- ❑ Demonstrate proper settings of monochromator focus and gun lens.
- ❑ Check instrument status (TEM/STEM, image/diffraction, accelerating voltage, etc.)
- ❑ Show which software needs to run to control which functionality

Pre-setup
- ❑ Explain strategies to find the beam if not present
- ❑ Demonstrate sample manipulation by using the Compustage
- ❑ Demonstrate procedure to find eucentric height of the sample
- ❑ Show electron-optical alignment procedures for "Direct Alignments" and "Stigmators"
- ❑ Demonstrate handling and choice of the CL2 aperture

Daily TEM operation
- ❑ Demonstrate how to set and align the TEM illumination (2-condenser lens mode)

Daily STEM operation
- ❑ Demonstrate how to set and align the STEM illumination (3-condenser lens mode)

Closing the session
- ❑ Set TEM mode if different
- ❑ Set magnification at x10K
- ❑ Close column valve
- ❑ Complete log book

Name _____

Date_____   **Proposal #**_____

Pass____ **Fail**____

TEAM 0.5

Flex License
Image corrector fine tuning

❑ Apply basic alignment on a cross-grating specimen
❑ Demonstrate how to set instrument conditions for tuning of the image corrector
❑ (magnification, illumination set up, defocus etc.)
❑ Know target values of aberration coefficients, e.g. A1, B2 etc.
❑ Demonstrate iterative tuning procedure using the corrector control software

Probe corrector fine tuning

❑ Apply basic alignment on a cross-grating specimen
❑ Demonstrate how to set instrument conditions for tuning of the illumination corrector
❑ (magnification, illumination set up, defocus etc.)
❑ Know target values of aberration coefficients, e.g. A1, B2 etc.
❑ Demonstrate iterative tuning procedure using the corrector control software

Monochromator setting

❑ Demonstrate how to set up, align and optimize a monochromator setting
❑ Show procedure to form a monochromated illumination for TEM
❑ Demonstrate procedure to form a monochromated STEM probe

GIF tuning

❑ Align the energy filter for spectroscopy and filtered imaging

Daily HREELS operation

❑ Demonstrate the procedure to optimize the energy resolution by manually minimizing
❑ spectrometer aberrations and 60 Hz interferences using the streak-imaging
   technique

Name _____

Date_____   Proposal #_____

Pass____ Fail____