

Core Status: new users must complete 2 trouble-free training sessions , execute a sample exchange and pass the drivers test to work independently during Core sessions.

Flex Status: Core users must complete 5 trouble-free sessions and pass a driving test to work independently during Flex sessions .

To reserve a Tecnai session, go to www/ncem.lbl.gov, click on "Microscope Scheduling", use proposal number and password to log in. You may only sign up for 1 Core session and 1 Flex session at a time. **To cancel** a session, email your request to the technical staff in charge of the microscope

CORE LICENSE

Safety

- Understand emergency shut down procedure
- Demonstrate handling the Column valve
- Point out where emergency contact numbers are posted
- Know how NCEM staff for support can be contact
- Wear face shield and gloves when handling LN, check if screen is covered

Instrument Preparation

- Show how to check basic vacuum functionality and target pressure values
- Demonstrate the proper settings of FEG, gun lens, and monochromator
- Show which software needs to run to control which functionality

Remove specimen holder

- Demonstrate holder removal procedure, including checking column valve status, stage reset and stage status confirmation

Mount specimen on the holder

- Know type of holder
- Wear gloves and use proper mounting tools
- Demonstrate specimen mounting procedure
- Know how to use plasma cleaner

Load specimen holder

- Demonstrate stage loading procedure, including stage selection and cable connection
- Understand the light of stage vacuum indicator
- Understand the hazard of premature rotation of the holder.

Pre-setup

- Explain strategies to find the beam if not present
- Demonstrate specimen manipulation by using the stage functionality
- Demonstrate procedure to find eucentric height
- Demonstrate basic column alignment procedures
- Demonstrate handling apertures

Daily TEM operation

- Demonstrate how to set and align the TEM illumination
- Demonstrate how to use GIF CCD camera
- Demonstrate how to apply GIF tuning

Daily STEM operation

- Demonstrate how to set and align the STEM illumination
- Demonstrate how to use software for STEM image acquisition

Shut down

- Set TEM mode if different
- Set magnification at x10K
- Close column valve
- Set Cryo Cycle, check HT and FEG after 5 min.
- Complete log book

Name _____**Date** _____ **Proposal #** _____**Pass** ____ **Fail** ____



FLEX LICENSE

Monochromator setting

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

Daily HREELS operation

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

Name _____

Date _____ **Proposal #** _____

Pass _____ **Fail** _____