

## Rules for FEI Quanta 200 Scanning Electron Microscope (SEM)

**All users must consult with the SEM custodian (Prof. Behl, Prof. Ojeda-Aristizabal, or their designees) regarding the usage and fees.**

Dr. Thomas Douglass [Thomas.Douglass@csulb.edu](mailto:Thomas.Douglass@csulb.edu) certifies the users, provides the technical expertise, and does a minor maintenance for the SEM.

1. **Fees:** The faculty member of all SEM users are to contribute funds for maintenance of the microscope and consumables (e.g., tungsten filaments, carbon or gold sputter targets).
  - a. The hourly usage charge is \$15. The PI is expected to pay for the usage in January and July of each year. The CNSM faculty pays a reduced rate of \$10/hour.
  - b. The first 4 hours of use is provided free of charge.
  - c. A heavy user group (over 200 hours/year) pays \$2,000/year.
  - d. A power user group contributing \$4,000/year will have a priority sign-up.
2. For a one- or two-time use only, contact the SEM custodian and certified user who can provide technical assistance for your project.
3. **Becoming a Certified User:**
  - a. Download and complete all pre-certification requirements. (Student pre-certification check page)
  - b. All potential user must complete General Safety Training and Radiation Safety Training. Contact CNSM Safety Office for the training.
  - c. The potential user must read the Standard Operating Procedure (SOP) and the theoretical/operational reading material to understand the functioning of the SEM.
  - d. The potential user should then contact a Certified User and shadow the user for at least 7 hours.
  - e. Once the potential user is sufficiently comfortable with the equipment, he/she should contact Dr. Thomas Douglass for a certification.
  - f. The certification consists on a hands-on exam on the operation of the system and the understanding of the SEM.
4. SEM time must be scheduled using the designated Google calendar.
  - a. Only certified users are permitted to reserve the SEM time.
  - b. Reservations should not be longer than five hours.
  - c. Reservations that are not kept within 30 minutes of the starting time will be cancelled.
5. The user **MUST** sign in the Log Book in the SEM lab.
  - a. The Log Book contains User Name, Date, Supervisor, Sample Material, Acceleration voltage, Time In, Time Out, and any comments regarding the SEM (for ebeam lithography include spot sizes used and measured currents).
  - b. If the SEM session is finished early or is cancelled, please notify the next two users by email
6. If the filament breaks during the SEM session, contact Thomas Douglass by phone or at [Thomas.Douglass@csulb.edu](mailto:Thomas.Douglass@csulb.edu)
7. Students interested in using EDS/XRF for chemical analysis or ebeam lithography should contact Profs. Behl and Ojeda-Aristizabal, respectively, for additional training.