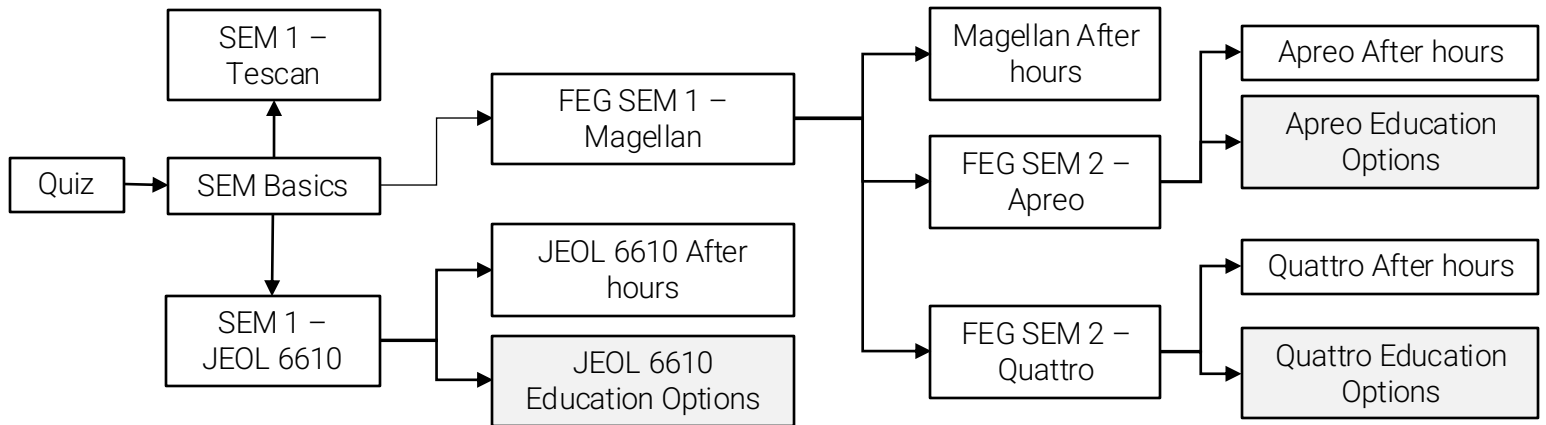


CCEM strives to be Canada's leader in comprehensive, accessible training in cutting edge microscopy. We recognizes the rapidly evolving landscape of microscopy and are dedicated to offering a comprehensive educational experience in the latest techniques. However, the heart of this training remains our students. Our design is aimed at ensuring maximum accessibility, placing students at the epicenter of our efforts, empowering them to harness the full potential of SEM technology and contribute significantly to its future advancements.

SEM Training Workflow: White boxes are available options; grey boxes are coming soon!*



*Training is available for the designated grey box modules; however, standard pricing and methodologies will apply.

Introductory SEM Quiz

Description:	Tests basic EM theory based on suggested reading and learning material.
Prerequisite:	Approved access to CCEM (incl. WHMIS 2015)
Completion Requirement:	Grade of $\geq 80\%$
Permissions:	None

Module: SEM Basics

Description:	Introduction to SEM, detectors, capabilities and basic alignments.
Prerequisite:	Completion of Introductory SEM Quiz
Completion Requirement:	1 in-person training session with staff
Permissions:	None

Module: SEM 1 - JEOL 6610

Description:	Enhanced training for SEM basics and image acquisition.
Prerequisite:	Completion of SEM Basics Module
Completion Requirement:	2 in-person training and hands-on skills test
Permissions:	Unsupervised Daytime JEOL 6610 Booking

Module: SEM 1 - Tescan (FHS)

Description:	Enhanced training for SEM basics and image acquisition.
Prerequisite:	Completion of SEM Basics Module
Completion Requirement:	2 in-person training and hands-on skills test
Permissions:	Unsupervised Daytime Tescan Booking

Module: FEG SEM 1 - Magellan

Description:	Advanced training for high-resolution SEM.
Prerequisite:	Completion of SEM Basics Module
Completion Requirement:	2 in-person training and hands-on skills test
Permissions:	Unsupervised Daytime Magellan Booking

Module: FEG SEM 2 - Apreo

Description:	Transitioning skills from FEG SEM 1 to imaging with the Apreo.
Prerequisite:	Completion of FEG SEM 1 Module with 2 hours of independent logged time.
Completion Requirement:	2 in-person training and hands-on skills test
Permissions:	Unsupervised Daytime Apreo Booking

Module: FEG SEM 2 - Quattro

Description:	Transitioning skills from FEG SEM 1 to imaging with the Quattro.
Prerequisite:	Completion of FEG SEM 1 with 2 hours of independent logged time.
Completion Requirement:	2 in-person training and hands-on skills test
Permissions:	Unsupervised Daytime Quattro Booking

Module: After Hours

Description:	Enhanced troubleshooting and safety procedures for working after hours.
Prerequisite:	Respective instrument module completion and 6 Daytime logged hours on that instrument
Completion Requirement:	1 in-person training session
Permissions:	Unsupervised After Hours Booking

Pricing

The pricing for ETM is structured at a reduced rate, ranging between 30% to 50% off the standard hourly rates. This adjustment is in line with our commitment to promote easier access and facilitate student education. As more modules become available this table will be updated.

	Module	Re-test	Missed Session	After hours	EDS	EBSD	Pathfinder	Stages	Gases
SEM Basics	240		120						
SEM 1 – JEOL 6610	200	140	50	70					
SEM 1 – Tescan	200	140	50						
FEG SEM 1 - Magellan	440	160	110	80					
FEG SEM 2 – Quattro	320	160	80	80					
FEG SEM2 - Apreo	365	240	125	120					

User Expectations:

Training Session Booking Requirements:

- Bookings will not be completed until the Introductory SEM Quiz is complete
- All training sessions must be booked a maximum of one week apart to complete a module. If the training sessions go beyond one week apart the student will be expected to take an additional training session at the price listed as a “missed session”.
- SEM Basics must be booked one week maximum before entering SEM 1 and/or FEG SEM 1.

Introductory SEM Quiz: To ensure proficiency, users are expected to achieve a score of 80% or above. Should the initial attempt not meet this standard, a fresh quiz will be provided. We encourage continuous learning, allowing users to retake the quiz as needed until the desired grade is secured. We're here to support your journey to mastery!

Module Hands-on test: To ensure the highest standards of proficiency, students are required to achieve a passing score on the test. Upon completion, each student will receive a detailed copy of their graded quiz for review. In the event a student doesn't meet the required standard, we offer an additional one-hour practice session followed by another test, available for the fee listed in the pricing table as “re-test”. This follow-up should be scheduled within a week from the initial test date. Our commitment is to mastery; hence, if a student doesn't meet the mark on their second attempt, revisiting the entire module will be necessary to ensure thorough understanding.

Additional Instruction: A student can request additional instruction before their module hands-on test. This will be charged at the full instrument and staff rate.

Previous training from another institution: Should a student indicate prior experience with SEM training, our team, at its discretion, may offer the opportunity to advance directly to the hands-on test. To ensure readiness, students will be granted a one-hour practice session followed by an assessment for the fee listed in the pricing table as “re-test”. However, in the event the test isn't successfully completed, the student will then commence their training journey with the introductory SEM Quiz to ensure foundational knowledge is solidified. We aim to recognize existing expertise while ensuring all users meet our rigorous standards for SEM operation.

Missed session or arriving late: To maintain the efficiency of our training sessions, we kindly request users to notify the instructor before the start of the training session if they're unable to attend a scheduled session. Please be aware that missing a session without timely notice or arriving over 10 minutes late will incur a fee of a missed session. To continue with the training program, it will be essential to reschedule the missed session within the one-week period from your previous training session.

Training samples: To ensure a consistent and fair training experience for everyone, we will provide standardized samples during both training and assessment phases. This approach is designed to foster equity and uniformity throughout the learning process for all users.

Independent Instrument Permissions: If a user remains inactive for a period of six months, their booking privileges will be temporarily suspended at the discretion of CCEM staff. To regain unsupervised access to the instrument, a proficiency test with a one-hour practice session will need to be scheduled at a cost of a re-test. Please note that if one doesn't successfully complete this test, the procedure for a failed hands-on test will be followed.

Accessibility: At CCEM, we are committed to fostering an inclusive and supportive environment for all participants in our training sessions. We understand that individuals may have different needs, and we are dedicated to working with students to provide accommodations that empower them to succeed. If you require alternative formats or communication supports, experience any accessibility-related barriers, or require accommodations, please contact the Manager of Education, Governance, and Outreach, Samantha Stambula, at stambusm@mcmaster.ca. We will collaborate with you to ensure your experience is accessible, comfortable, and conducive to learning. Your success is important to us, and we are here to help you achieve your goals.