

Materials Science and Engineering 6740
Practical Scanning Electron Microscopy Laboratory
Syllabus
Spring Semester 2020

Time	Section 35043: Wednesday 10:00am – 12:00 pm
Place	The Center for Electron Microscopy and Analysis (CEMAS) (https://cemas.osu.edu/directions)
Instructor	Frank J. Scheltens (scheltens.2@osu.edu)
Teaching Assistants	Ben Georin (georin.1@osu.edu)
Pre-requisites	Graduate standing or permission of instructor.
Objective	Students will develop a basic understanding of scanning electron microscopy characterization methods, as well as an understanding of sample preparation and compatibility, various imaging modes and analytical techniques. Upon completion of this course, students will have the ability to operate a scanning electron microscope at an elementary skill level.
Content	This course focuses primarily on the practical operation of a scanning electron microscope, and not on its theoretical background. Laboratories in basic scanning electron microscope operation, electron beam alignment, electron imaging modes and detectors, image acquisition, energy dispersive spectroscopy, electron backscatter diffraction, and sample preparation will be performed. Students will take a laboratory practical examination at the end of the course that will qualify them to proceed directly to CEMAS instrument use focused on their individual research requirements.
Grading	25% In-Class Activities 25% Laboratory Assignments 50% Laboratory Practical Examination This course is graded S/U. Final grades will be assigned based on the criteria outlined in university rule 3335-8-21.
Attendance	There are no unexcused absences.
Textbooks and Other Material	There is no assigned textbook for the course. Other material may be provided via Carmen under the content area for this course.

Safety

All students are required take the Materials Science and Engineering departmental safety exam located on the MSE safety website <https://mse.osu.edu/mse-laboratory-safety>

Academic Integrity

Academic integrity is essential to maintaining an environment that fosters excellence in teaching, research, and other educational and scholarly activities. Thus, The Ohio State University and the Committee on Academic Misconduct (COAM) expect that all students have read and understand the University's Code of Student Conduct (<https://trustees.osu.edu/assets/files/RuleBook/CodeStudentConduct.pdf>), and that all students will complete all academic and scholarly assignments with fairness and honesty. Students must recognize that failure to follow the rules and guidelines established in the University's Code of Student Conduct and this syllabus may constitute "Academic Misconduct." Other sources of information on academic misconduct (integrity) to which you can refer include: The Committee on Academic Misconduct (<https://oaa.osu.edu/academic-integrity-and-misconduct>); Ten Suggestions for Preserving Academic Integrity (<https://oaa.osu.edu/academic-integrity-and-misconduct/student-misconduct>).

Disability Services

If you have a documented disability, please register with Student Life Disability Services. After registration, make arrangements with the instructor as soon as possible to discuss your accommodations, so they may be implemented in a timely fashion. If you have any questions about this process, please contact Disability Services (<http://slds.osu.edu/>) at 614-292-3307.