INTRODUCTION TO THE MAJOR

Materials Science and Engineering (MSE) encompasses all natural and synthetic materials – their extraction, synthesis, processing, properties, characterization, and development for technological applications. Materials Engineers are involved in every aspect of technology, ranging from the design of materials for use in consumer electronics, medical and healthcare applications, energy generation and storage, transportation (from vehicles to bridges), and beyond. MSE teaches core fundamentals while preparing students to solve modern-day materials challenges. Students can also become involved in cutting-edge research in one of the many faculty-led research groups. The MSE program is ABET accredited.

DEGREE OPTIONS

H ow to Use This Map

Use this map to help plan and guide your experience at UC Berkeley, including academic, co-curricular, and discovery opportunities. Everyone’s Berkeley experience is different and activities in this map are suggestions. Always consult with your advisors whenever possible for new opportunities and updates.

CONNECT WITH US

Cal Day
Come to UC Berkeley’s annual Open House in April for information sessions, campus tours, special talks, and more.

Golden Bear Orientation
Join your peers in the campus-wide UC Berkeley orientation program for all new students.

Events
Attend department events with students, faculty, and staff. Visit mse.berkeley.edu for news and updates.

ADVISING

For department-specific advising, including course equivalencies, exceptions, and enrollments, contact the MSE undergraduate adviser at medinakohzad@berkeley.edu. Students are also encouraged to meet with an MSE faculty advisor and discuss their program progress, research opportunities, and career plans. See mse.berkeley.edu/advising/.

Visit Engineering Student Services in 230 Bechtel for advising on degree requirements and completion, academic progress, petitions and exceptions, academic difficulty, change of major/joint major/simultaneous degrees, cancellations/withdrawals/readmission, and education abroad. See engineering.berkeley.edu/students/ess-advising/.

HOW TO USE THIS MAP

Use this map to help plan and guide your experience at UC Berkeley, including academic, co-curricular, and discovery opportunities. Everyone’s Berkeley experience is different and activities in this map are suggestions. Always consult with your advisors whenever possible for new opportunities and updates.

Visit ue.berkeley.edu/majormaps for the latest version of this major map.

I love the way Materials Science and Engineering is so directly relevant to understanding the world around me and consequently essential to solving so many of the world’s problems.

– Avni Singhal

AMPLIFY YOUR MAJOR

- Engage in undergraduate research with world-leading faculty or scientists at the Lawrence Berkeley National Laboratory
- Get involved with the Materials Science Engineering Association
- Learn about technology innovation abroad with GLOBE Ambassadors
- Consider a MSE joint major or 5th year BS/MS degree
MATERIALS SCIENCE AND ENGINEERING

Bachelor of Science

FIRST YEAR

Explore your major
- Meet with your ESS advisor to discuss your academic plan.
- Familiarize yourself with major and college requirements, and the MSE Curriculum.
- Talk to the MSE faculty advisors about department programs and research opportunities.
- Enroll in the first year MSE courses: MSE 45L - Properties of Materials Laboratory.

Connect and build community
- Join the Materials Science and Engineering Association (MSEA) student organization.
- Take advantage of tutoring and workshops for Engineering students.
- Attend office hours and seek help when you need it.
- Find student opportunities in the ESS newsletter.

Discover your passions
- Browse research taking place in Engineering centers, institutes, and labs.
- Attend the Undergraduate Research and Scholarships Fair in September and October.
- Discover new interests in a Freshman Seminar or student-run DeCal course.
- Read about faculty research in MSE — find out who is doing what and make time to chat with them.

Engage locally and globally
- Attend the Calapalooza student activities fair and get involved with a student organization such as MSEA.
- Find service opportunities through the Public Service Center.
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SECOND YEAR

SECOND YEAR

Explore your major
- Meet with your department and ESS advisors to discuss your academic progress.
- Complete lower division prerequisites and start planning your upper division courses.
- Plan now if considering a combined BS/MS program, joint or double major, simultaneous degree, minor, or study abroad.

Connect and build community
- Attend MSE and department events like MSE Town Halls, and get to know faculty, staff, and students.
- Follow Berkeley MSE on Facebook, Twitter, Instagram and LinkedIn.
- Get to know Engineering professors and graduate student instructors during their office hours.

Discover your passions
- Consider pursuing research with a group in MSE (see resources for MSE and Engineering students).
- Apply for internships or research opportunities outside Berkeley (like an REU research program).
- Check Berkeley Lab and UC SF as well.
- Check out design and maker opportunities at the Jacobs Institute.

Engage locally and globally
- Work with a community organization in an American Cultures Engaged Scholarship course such as ENSG 157AC.
- Apply to GLOBE Ambassadors, a learning and travel program for Engineering students.
- Mentor local youth with Pioneers in Engineering, Berkeley Engineers and Mentors, or Engineering for Kids.

THIRD YEAR

THIRD YEAR

Explore your major
- Focus on upper division requirements like the MSE SE series and materials data elective.
- Continue meeting with your department and ESS advisor to review your academic progress.
- Submit paperwork for a joint or double major, simultaneous degree, minor, or study abroad.
- Plan your elective courses — expand your education with targeted choices.

Connect and build community
- Give back by becoming an ESS peer advisor.
- Join the Berkeley Engineering group on LinkedIn.
- Attend MSE weekly seminars and other events — get to know a new group of individuals.
- Continue attending department events and parties.

Discover your passions
- Look for new experiences — work in a new lab or spend a summer at a company or national lab.
- Explore your mission and impact as an Engineer through the LeaderShape Institute.
- Apply innovation to healthcare through the Fung Fellowship.
- Explore entrepreneurship through the Sutardja Center and Skydeck.

Engage locally and globally
- Consider a leadership role in MSE.
- Take your engineering skills international through Engineers Without Borders.
- Experience life at another UC or colleges on a visit and exchange program.
- Going abroad? Apply for travel funding from the Berkeley Office of International Affairs.

FOURTH YEAR

FOURTH YEAR

Explore your major
- Meet with your ESS advisor to do an official degree check and plan for your final year.
- Complete any "bucket list" courses and remaining major, college, and campus requirements.
- Complement your major with a certificate, course thread, or summer minor.
- Complete applications to the 5th year BS/MS program or other graduate programs.

Connect and build community
- Put your plan into action! Going to grad school? Get a job? Make time to achieve your goals.
- Network and leverage your network as you prepare to graduate.

Discover your passions
- Serve as a student representative on a college committee.
- Join a professional association such as the Materials Research Society.
- Get feedback as part of MSEA — support younger students as they find their own way.
- Connect with alumni groups and leverage your network as you prepare to graduate.

Engage locally and globally
- Attend career and graduate school fairs such as the STEM Career & Internship Fair.
- Attend a career workshop, networking dinner, or career conference.
- Make an advising appointment in ESS and explore options such as 5th year MS, ME, and PhD.
- Ask professors and graduate student instructors for recommendations letters.
- Visit job board tools in your job search. Meet employers at Employer Info Sessions and On-Campus Recruiting.
- Attend the job offer negotiation workshop in ESS.
- Apply to jobs, graduate school, and other opportunities.

WHAT CAN I DO WITH MY MAJOR?

Upon graduation, MSE students are prepared for a number of different career paths. Many go on to graduate studies at prestigious universities. Others head directly into the workforce hired as engineers in Silicon Valley, the biotechnology sector, the aerospace field, and beyond.

Employers
- Amazon
- Apple
- Bayer Healthcare
- Baxter
- BP
- Chevron
- Dow
- Dupont
- Exponent
- Exxon
- First Solar
- FormFactor Inc
- Google
- Hewlett Packard
- Intel
- Imerys
- Imperion Energy
- Johnson & Johnson
- Lam Research
- Lockheed Martin
- Micros
- Microsoft
- Rolex
- Samsung
- Space
- Testa

Graduate Programs
- Chemical Engineering, PhD
- Electrical Engineering, PhD
- Finance, PhD
- Law, JD
- Materials Science & Engineering, PhD
- Nuclear Engineering, PhD
- Solid State Physics, PhD

Examples gathered from the First Destination Survey of recent Berkeley graduates.

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