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.

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.

DEGREE OPTIONS

WITHOUT MATERIALS, THERE IS NO ENGINEERING

The curriculum provides a strong foundation in the science and engineering of materials, leveraging both classroom and hands-on laboratory experiences, while offering you freedom to explore areas of your choice. Students can also pursue joint majors, hybrids of MSE and other majors for a single degree, offered with many other departments.

Students may also opt for a combined Bachelor of Science/Master of Science with a fifth year of research and classroom intensive graduate study that prepares students for careers in engineering, engineering management, government, and/or industrial sectors.

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
Explore your major

- Meet with your ESS advisor to discuss your academic plans.
- 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.
- Explore study, internship, and research abroad options with Berkeley Study Abroad.
- Find out what will take and the best timing for this.

Reflect and plan your future

- Visit the Career Center and Career Counseling Library.
- Sign up for Handshake and CareerMail. Create a resume and LinkedIn page at an ESS workshop.
- Explore career resources on the Engineering and Career Center websites.
- Start exploring internships and research experiences.

FIRST YEAR

- Meet with your ESS advisor to discuss your academic plans.
- 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.

SECOND YEAR

- 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.

THIRD YEAR

- Focus on upper division requirements like the MSE 65x series and math/stats/data elective.
- 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.

FOURTH YEAR

- 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.

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
- Applied Materials
- Bayer Healthcare
- Baxter
- BP
- Chevron
- Dupont
- Exponent
- Exxon
- First Solar
- FormFactor Inc.
- Google
- Hewlett Packard
- Intel
- Imerys
- Imprent Energy
- Johnson & Johnson
- Lam Research
- Lockheed Martin
- Micron Technology
- SpaceX
- Tesla

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.