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

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.

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.

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
FIND YOUR JOURNEY
SECOND YEAR
MATERIALS SCIENCE AND ENGINEERING
your future
Reflect
your passions
Discover
your passions
Engage
locally and globally
Reflect
and plan your future

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 49X - 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 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 it will take and the best time for this.

Visit Berkeley Career Engagement and the 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 website.
Start exploring internships and research experiences.

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.

SECOND YEAR
Look for new experiences — work in a new lab or spend a summer at a company or national lab.
Explore your interests and impact at an Engineer through the LeaderShape Institute.
Visit a Berkeley Lab and UCSCF as well.
Check out design and maker opportunities at the Jacobs Institute.

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

SECOND YEAR
Consider a leadership role in MSE.
Take your engineering skills international through Engineers Without Borders.
Experience life at another UC or colleges on a visiting and exchange program.
Going abroad? Apply for travel funding from GLOBE Scholars.

FOURTH YEAR
MEET WITH YOUR ESS ADVISOR TO DISCUSS YOUR ACADEMIC PROGRESS.

FOURTH YEAR
Complete upper division requirements like the MSE 10X series and math/stat/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.

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 all requirements to graduate.

FOURTH YEAR
Put your plan into action! Going to grad school? Getting a job? Make time to achieve your goals.
Keep seeking new experiences or settle to make impact on one you like.
Going to pursue a PhD? Apply for fellowships like the NSF GRFP, NDSEG, and others.
Teach your own DeCal course or consider being an instructor for ENGIN 98.

FOURTH YEAR
Serve as a student representative on a college committee.
Hone your leadership skills with the Peter E. Haas Public Service Leaders program.
Explore service opportunities after graduation, such as Peace Corps, Teach for America, or U.S. Department of State.

FOURTH YEAR
Attend career and graduate school fairs such as the STEM Career & Internship Fair.
Discuss graduate and professional school options with advisors and professors.
Submit applications for internal and external programs.
Make an advising appointment in ESS and explore options such as 5th year MS, MEng, and PhD.

FOURTH YEAR
Ask professors and graduate student instructors for recommendation letters.
Utilize 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
Applied Materials
Bayer Healthcare
Basf
Chevron
Dow
Dupont
Exxon
First Solar
FormFactor Inc.
Google
Hewlett Packard
Intel
Imerys
Impin 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.

CONNECT AND BUILD COMMUNITY

DISCOVER YOUR PASSIONS

ENGAGE LOCALLY AND GLOBALLY

REFLECT AND PLAN YOUR FUTURE

FIRST YEAR
SECOND YEAR
THIRD YEAR
FOURTH YEAR
MATERIALS SCIENCE AND ENGINEERING

BACHELOR OF SCIENCE

University of California