Industrial engineers find the most effective and efficient way to use basic factors of production—people, machines, materials, information, and energy—to make a product or provide a service. In Industrial Engineering and Operations Research (IEOR), we invent, analyze and teach tools and approaches for design, analysis, risk management, and decision-making in complex real-world systems like supply chains, energy systems, healthcare systems, and financial systems.

The department offers a major accredited by the Engineering Accreditation Commission of ABET. A minor in IEOR is available, as well as an Operations Research and Management Science major in the College of Letters & Science.

“\textit{This world is full of challenges, and with an IEOR education I can tackle many—if not all—of them.}”

— Jenny Cortez, IEOR Class of 2018

The IEOR curriculum

The core of the IEOR program includes basic science, mathematics including probability and statistics, engineering optimization, and stochastic models. This forms the methodological foundation for upper division IEOR electives involving the analysis and design of production and service systems, information systems, and human work systems and organization, among others.

Amplify your major

- Join an Engineering student group such as the Institute of Industrial Systems Engineers or Alpha Pi Mu.
- Take a Challenge Lab course such as IEOR 185.
- Enrich your studies with the Sutardja Certificate in Entrepreneurship and Technology.
- Build your skills with electives such as IEOR 142: Introduction to Machine Learning and Data Analytics or IEOR 150: Production Systems Analysis.
INDUSTRIAL ENGINEERING AND OPERATIONS RESEARCH

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.
- Talk to the IEOR advisor about department programs and research opportunities.

Connect and build community
- Take advantage of tutoring and workshops for Engineering students at the Center for Access to Engineering Excellence.
- Discover student opportunities in the ESS newsletter and new student podcast.
- Find study space and resources in the Kresge Engineering Library.

Discover your passions
- Browse research taking place in Engineering centers, institutes, and labs.
- Visit the Office of Undergraduate Research and Scholarships.
- Discover new interests in a Freshman Seminar or student-run DeCal course.
- Broaden your perspective by attending Newton Series or View from the Top Lectures.

Engage locally and globally
- Attend the Calapalooza student activities fair and get involved with a student organization.
- Explore Engineering student organizations.
- Find service opportunities through the Public Service Center.
- Explore study, internship, and research abroad options with Berkeley Study Abroad.

Reflect and plan your future
- Visit the Career Center and Career Counseling Library.
- Check out the Career Center Yearly Planner.
- Sign up for Handshake and CareerMail.
- Explore career resources on the Engineering and Career Center websites.
- Attend an ESS workshop to create a resume and LinkedIn page.

SECOND YEAR

Explore your major
- Talk to ESS peer advisors about life in the major.
- Meet with your ESS advisor to discuss your academic progress and any challenges.
- Complete lower division prerequisites and start planning your upper division courses.
- Plan now for a double major, simultaneous degree, minor, or study abroad.

Connect and build community
- Join an Engineering student group such as the Institute of Industrial Systems Engineers.
- Start attending department events.
- Get to know professors and graduate student instructors in office hours.
- Continue attending tutoring and workshops, and reading the weekly newsletter.

Discover your passions
- Consider pursuing a research opportunity for Engineering and IEOR students.
- Apply to the Fung Fellowship or a REU research program. Check Berkeley Lab and Bebhave for more research options.
- Explore entrepreneurship through the Sutardja Center and Skydeck.

Engage locally and globally
- Contribute to a community organization in an American Cultures Engaged Scholarship course such as ENGIN 105AC.
- Consider a Berkeley Global Internship such as the Engineering Internship in Toronto.
- Mentor local youth with Pioneers in Engineering or Berkeley Engineers and Mentors.

Reflect and plan your future
- Think about which industries interest you (supply chains, healthcare, semiconductors, transportation).
- Meet with a Career Center counselor to discuss your career options and goals.
- Explore careers through GLOBE Ambassadors and informational interviews.
- Pursue an internship and attend an internship career fair.

THIRD YEAR

Explore your major
- Focus on upper division requirements and electives such as machine learning (IEOR 140) or production systems analysis (IEOR 190).
- Continue meeting with your ESS advisor to review your academic progress.
- Take a Challenge Lab course (IEOR 185), Data X (IEOR 195) or another project-based class.

Connect and build community
- Give back by becoming an ESS peer advisor.
- Join the Berkeley Engineering Group on LinkedIn.
- Explore student groups outside of Engineering, and deepen your involvement with an Engineering student group.
- Check out Alpha Pi Mu, the Industrial Engineering Honor Society.

Discover your passions
- Apply for a research opportunity if you haven’t done so already.
- Check out design and maker opportunities at the Sutardja Center and Skydeck.
- Consider the Sutardja Certificate in Entrepreneurship and Technology.

Engage locally and globally
- Learn how to be an ethical and inclusive global leader through the LeaderShape Institute.
- Experience life at another UC or college on a student exchange program.
- Study and intern in Washington D.C. with UCDC or Cal in the Capital.

Reflect and plan your future
- Attend career and graduate school fairs such as the STEM Career & Internship Fair.
- Discuss graduate school options with advisors and professors. Make an advising appointment in ESS to explore a 2nd year MSE, MEng, or PhD.
- Sign up for an ESS career workshop, networking dinner, speaker series, or career conference.

FOURTH YEAR

Explore your major
- Meet with your ESS advisor to do an official degree check and plan for your final year.
- Target your senior project towards your desired career or future education.
- Complete any “bucket list” courses and remaining major, college, and campus requirements.
- Complement your major with a certificate, course thread, or summer minor.

Connect and build community
- Join a professional association related to your interests.
- Connect with alumni groups and leverage your network as you prepare to graduate.
- Follow up with your past professors and ask what you can do to help them as an IEOR alum.

Discover your passions
- Teach your own DeCal course.
- Consider being an instructor for ENGIN 98.
- Continue to pursue your interests through a fellowship or gap year after graduation.
- Choose your post-baccalaureate plans based upon your intended major and impact as an Engineer.

Engage locally and globally
- 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 Engineers Without Borders, Peace Corps, Teach for America, or U.S. Department of State.

Reflect and plan your future
- Attend career and graduate school fairs such as the STEM Career & Internship Fair.
- Discuss graduate school options with advisors and professors. Make an advising appointment in ESS to explore a 2nd year MSE, MEng, or PhD.
- Sign up for an ESS career workshop, networking dinner, speaker series, or career conference.

WHAT CAN I DO WITH MY MAJOR?

The IEOR major prepares students for technical careers in production or service industries. It provides a strong foundation for those headed for engineering management positions or for those intending to go on to specialized graduate study in operations research, industrial engineering, or business administration.

Jobs and Employers


Graduate Programs

- Business, Masters
- Computational Math., Masters
- Computer Science, Masters, PhD Economics, PhD
- Engineering Science, Masters
- Industrial Engineering, Masters
- Operations Research, Masters

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

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