



Photo credit: Bart Nagel

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 ieor.berkeley.edu for news and updates.

ADVISING

Visit Engineering Student Services in 230 Bechtel for advising on academic difficulty, change of major/double majors/simultaneous degrees, withdrawal/readmission, degree completion, education abroad, academic progress, and petitions and exceptions. See engineering.berkeley.edu/advising for more information.

For department-specific advising, contact the IEO undergraduate advisor at ieor-student-services@berkeley.edu.

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.

Berkeley

Industrial Engineering and Operations Research
4141 Etcheverry Hall
Berkeley, CA 94720-1777
ieor.berkeley.edu

INDUSTRIAL ENGINEERING AND OPERATIONS RESEARCH

Bachelor of Science

Berkeley
UNIVERSITY OF CALIFORNIA

INTRODUCTION TO THE MAJOR

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 IEO is available, as well as an **Operations Research and Management Science major** in the College of Letters & Science.



Photo credit: IEO

“*This world is full of challenges, and with an IEO education I can tackle many—if not all—of them.*”

– Jenny Cortez, IEO Class of 2018

THE IEO CURRICULUM

The core of the IEO program includes basic science, mathematics including probability and statistics, engineering optimization, and stochastic models. This forms the methodological foundation for upper division IEO 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 IEO 185.
- Enrich your studies with the **Sutardja Certificate in Entrepreneurship and Technology**.
- Build your skills with electives such as IEO 142: Introduction to Machine Learning and Data Analytics or IEO 150: Production Systems Analysis.

INDUSTRIAL ENGINEERING AND OPERATIONS RESEARCH

Bachelor of Science

DESIGN YOUR JOURNEY

	FIRST YEAR	SECOND YEAR	THIRD YEAR	FOURTH YEAR	WHAT CAN I DO WITH MY MAJOR?
Explore your major	<p>Meet with your ESS advisor to discuss your academic plans.</p> <p>Familiarize yourself with major and college requirements.</p> <p>Talk to the IEOR advisor about department programs and research opportunities.</p> <p>Enroll in ENGIN 98: The Insider's Guide to Berkeley Engineering.</p>	<p>Talk to ESS peer advisors about life in the major.</p> <p>Meet with your ESS advisor to discuss your academic progress and any challenges.</p> <p>Complete lower division prerequisites and start planning your upper division courses.</p> <p>Plan now for a double major, simultaneous degree, minor, or study abroad.</p>	<p>Focus on upper division requirements and electives such as machine learning (IEOR 142) or production systems analysis (IEOR 150).</p> <p>Continue meeting with your ESS advisor to review your academic progress.</p> <p>Take a Challenge Lab course (IEOR 185), Data X (IEOR 135) or another project-based class.</p>	<p>Meet with your ESS advisor to do an official degree check and plan for your final year.</p> <p>Target your senior project towards your desired career or future education.</p> <p>Complete any "bucket list" courses and remaining major, college, and campus requirements.</p> <p>Complement your major with a certificate, course thread, or summer minor.</p>	<p>WHAT CAN I DO WITH MY MAJOR?</p> <p>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.</p> <p>Jobs and Employers</p> <p>Analyst Consultant, Goldman Sachs Asst. Baseball R&D, Tampa Bay Rays Business Analyst, Macquarie Business Tech. Analyst, Deloitte Consultant, Applied Predictive Technologies Data Analyst, Sweetgreen Data Engineer, Bechtel Finance Associate, Quicken Loans Industrial Engineer, SpaceX IT Project Management, Quicken Loans Product Manager, SAP Research Analyst, Hall Capital Partners Software Engineer, LiveRamp Tech Consultant, Deloitte Test Engineer, Northrop Grumman</p> <p>Graduate Programs</p> <p>Business, Masters Computational Math., Masters Computer Science, Masters, PhD Economics, PhD Engineering Science, Masters Industrial Engineering, Masters Operations Research, Masters</p> <p>Examples gathered from the First Destination Survey of recent Berkeley graduates.</p>
Connect and build community	<p>Take advantage of tutoring and workshops for Engineering students at the Center for Access to Engineering Excellence.</p> <p>Discover student opportunities in the ESS newsletter and new student podcast.</p> <p>Find study space and resources in the Kresge Engineering Library.</p>	<p>Join an Engineering student group such as the Institute of Industrial Systems Engineers.</p> <p>Start attending department events.</p> <p>Get to know professors and graduate student instructors in office hours.</p> <p>Continue attending tutoring and workshops, and reading the weekly ESS newsletter.</p>	<p>Give back by becoming an ESS peer advisor.</p> <p>Join the Berkeley Engineering group on LinkedIn.</p> <p>Explore student groups outside of Engineering, and deepen your involvement with an Engineering student group.</p> <p>Check out Alpha Pi Mu, the Industrial Engineering Honor Society.</p>	<p>Join a professional association related to your interests.</p> <p>Connect with alumni groups and leverage your network as you prepare to graduate.</p> <p>Follow up with your past professors and ask what you can do to help them as an IEOR alumnus.</p>	
Discover your passions	<p>Browse research taking place in Engineering centers, institutes, and labs.</p> <p>Visit the Office of Undergraduate Research and Scholarships.</p> <p>Discover new interests in a Freshman Seminar or student-run DeCal course.</p> <p>Broaden your perspective by attending Newton Series or View from the Top lectures.</p>	<p>Consider pursuing a research opportunity for Engineering and IEOR students.</p> <p>Apply to the Fung Fellowship or a REU research program. Check Berkeley Lab and Beehive for more research options.</p> <p>Explore entrepreneurship through the Sutardja Center and Skydeck.</p>	<p>Apply for a research opportunity if you haven't done so already.</p> <p>Check out design and maker opportunities at the Jacobs Institute.</p> <p>Consider earning the Sutardja Certificate in Entrepreneurship and Technology.</p>	<p>Teach your own DeCal course.</p> <p>Consider being an instructor for ENGIN 98.</p> <p>Continue to pursue your interests through a fellowship or gap year after graduation.</p> <p>Choose your post-baccalaureate plans based upon your intended mission and impact as an Engineer.</p>	
Engage locally and globally	<p>Attend the Calapalooza student activities fair and get involved with a student organization.</p> <p>Explore Engineering student organizations.</p> <p>Find service opportunities through the Public Service Center.</p> <p>Explore study, internship, and research abroad options with Berkeley Study Abroad.</p>	<p>Contribute to a community organization in an American Cultures Engaged Scholarship course such as ENGIN 157AC.</p> <p>Consider a Berkeley Global Internship such as the Engineering Internship in Toronto.</p> <p>Mentor local youth with Pioneers in Engineering or Berkeley Engineers and Mentors.</p>	<p>Learn how to be an ethical and inclusive global leader through the LeaderShape Institute.</p> <p>Experience life at another UC or college on a visitor and exchange program.</p> <p>Study and intern in Washington D.C. with UCDC or Cal in the Capital.</p>	<p>Serve as a student representative on a college committee.</p> <p>Hone your leadership skills with the Peter E. Haas Public Service Leaders program.</p> <p>Explore service opportunities after graduation, such as Engineers Without Borders, Peace Corps, Teach for America, or U.S. Department of State.</p>	
Reflect and plan your future	<p>Visit Berkeley Career Engagement and the Career Counseling Library.</p> <p>Develop a plan for getting career ready. Sign up for Handshake and CareerMail.</p> <p>Explore career resources on the Engineering website.</p> <p>Attend an ESS workshop to create a resume and LinkedIn page.</p>	<p>Think about which industries interest you (supply chains, healthcare, semiconductors, transportation).</p> <p>Discuss career options and goals with a Career Educator.</p> <p>Explore careers through GLOBE Ambassadors and informational interviews.</p> <p>Pursue an internship and attend an internship career fair.</p>	<p>Attend career and graduate school fairs such as the STEM Career & Internship Fair.</p> <p>Discuss graduate school options with advisors and professors. Make an advising appointment in ESS to explore a 5th year MS, MEng, or PhD.</p> <p>Sign up for an ESS career workshop, networking dinner, or career conference.</p>	<p>Ask professors and graduate student instructors for recommendation letters.</p> <p>Go to Employer Info Sessions and On-Campus Recruiting.</p> <p>Attend the job offer negotiation workshop in ESS.</p> <p>Apply to jobs, graduate school, and other opportunities.</p>	