INTRODUCTION TO THE MAJOR

Bioengineering is the application of engineering principles to biological systems. Students in the Bioengineering major study math, physics, chemistry, and biology, in addition to computer sciences, electrical and mechanical engineering, and/or materials sciences. They bring these skills together in bioengineering courses where they learn to analyze, understand, repair, and alter biological materials and systems.

Collaboration and interdisciplinary perspectives are key skills we encourage in all of our students, and we prize cooperation over competition whenever possible. BioE graduates pursue successful careers in industry, further study in medical school, and graduate studies in bioengineering and related disciplines at top universities.

THE FUTURE OF BIOLOGY.
THE FUTURE OF ENGINEERING.

Our curriculum provides a strong foundation in engineering and the biological sciences, with the freedom to explore a variety of topics and specialize in advanced areas of research. All students take bioengineering fundamentals courses in areas such as biomechanics, instrumentation, and computational biology, and choose from a growing list of bioengineering topics for specialized advanced coursework. In addition, students will take BioE laboratory courses and complete a design or research project under faculty supervision.

Students can pursue a concentration in Biomedical Devices; Biomedical Imaging; Cell & Tissue Engineering; or Synthetic & Computational Biology.

AMPLIFY YOUR MAJOR

- Engage in undergraduate research on a faculty-initiated project or your own research topic.
- Get teaching experience as an Undergraduate Student Instructor or DeCal facilitator.
- Berkeley offers a wealth of opportunities, from supplemental classes like Bioprinting @ Berkeley to the Summer Biodesign Immersion Experience and the Fung Fellowship in wellness and technology.

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.
**BIOENGINEERING**

**Design Your Journey**

**Bachelor of Science**

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**FIRST YEAR**

- Explore your major
  - Review the Bioengineering concentrations and general degree requirements.
  - Look for classes that spark your interest (such as Freshman Seminars).
  - Choose your concentration.
  - Attend the BioE Town Hall.

- Connect and build community
  - Meet other bioengineers at events and student groups like BioEHS and BMES.
  - Go to office hours and study groups (SLC, ESS).
  - Seek mentorship from upper division students.
  - Get help if you need it and respect your limits.

- Discover your passions
  - Find opportunities in BioE Announcements emails.
  - Go to the BioE weekly Announcements to get inspired.
  - Read about faculty research in Bioengineering, but don’t worry about joining a lab your first year.
  - Apply for study abroad.
    - Prime time for volunteering in the community - check out PIE, BEAM, BioEHS.
    - Apply to NSF Research Experience for Undergraduates (REU) and internship programs.

- Engage locally and globally
  - Interested in studying abroad later? Check out the requirements now.
  - Explore volunteering opportunities on campus.
  - Apply Biotech Career Connections and Bio-Tech Connect to learn about industry careers.
  - Check out career paths through the Career Connections Networking Series.
  - This is a great time for an off-campus internship!
  - Visit another university for an REU.

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**SECOND YEAR**

- Explore your major
  - Finish lower division courses.
  - Talk with advisor(s) and use the multi-year teaching plan to plan your prereqs and classes.
  - Considering a minor or summer minor?
    - Sketch out how it’ll fit into your 4-year plan.
    - Attend the BioE Town Hall.

- Connect and build community
  - Keep going to office hours and study groups to build your connections.
  - Get to know faculty and grad students at professor luncheons, Town Hall, research exhibits, etc.
  - Gain leadership experience in student organizations and ESS.

- Discover your passions
  - Plan for research.
    - Make a resume, talk to faculty.
    - Into health entrepreneurship? Apply for the Fung Fellowship.
    - What kind of problems do you want to solve? Start thinking about how they relate to potential careers and what skills you’ll need.

- Engage locally and globally
  - Find opportunities in BioE Announcements.
  - Apply for study abroad.
    - Prime time for volunteering in the community - check out PIE, BEAM, BioEHS.
    - Apply to NSF Research Experience for Undergraduates (REU) and internship programs.

- Reflect and plan your future
  - Check out the Career Center Yearly Planner.
  - Join Handshake for Career resources.
  - Apply for scholarships and awards as available.
  - What are you doing this summer? Look into jobs, volunteering, courses, and internships.
    (watch BioE Announcements).

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**THIRD YEAR**

- Explore your major
  - Choose classes from your concentration that will build the career skills you need.
  - Check in with a major advisor on degree progress.
  - Plan time for non-major courses on your bucket list.
  - Attend the BioE Town Hall.

- Connect and build community
  - Don’t stop going to events and seminars to hide in the lab. Time at Berkeley is precious!
  - Push your boundaries - connect with new student groups through the LEAD Center or become a Golden Bear Orientation Leader.

- Discover your passions
  - Doing research? Present your work whenever possible (Coll poster session, Cal Day) and apply for the Dr. Budinger Award.
  - Narrow your careers list and make a plan to get there. Faculty advisers can help.

- Engage locally and globally
  - Find opportunities to pursue your passions that go beyond campus, such as a Berkeley Global Internship, community volunteering, or independent project.
  - Apply for fellowships available to recent Berkeley graduates.
  - Explore gap year opportunities prior to embarking on your next academic or career adventure.

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**FOURTH YEAR**

- Explore your major
  - Meet with your major and college advisor to ensure you are fulfilling all major, college, and campus requirements.
  - Take the Bioengineering Capstone Design course if you haven’t fulfilled your Design Requirement.
  - Attend the BioE Town Hall.

- Connect and build community
  - You’ve made it! Now be a mentor for others.
  - Cement your knowledge by teaching: become a Engineering peer advisor or tutor at the Student Learning Center.
  - Do your BioE and UC/ES student surveys. Your perspective is at its most valuable.

- Discover your passions
  - Attack your career plans. Job shadow, visit grad schools, network!
  - Keep seeking out new experiences.
  - Earn a certificate through the Sutardja Center for Entrepreneurship & Technology, Jacobs Institute for Design and Innovation, or Arts & Design.

- Engage locally and globally
  - Cement your knowledge by teaching: become a Engineering peer advisor or tutor at the Student Learning Center.
  - Find opportunities to pursue your passions that go beyond campus, such as a Berkeley Global Internship, community volunteering, or independent project.
  - Apply for fellowships available to recent Berkeley graduates.
  - Explore gap year opportunities prior to embarking on your next academic or career adventure.

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**WHAT CAN I DO WITH MY MAJOR?**

**Jobs and Employers**

- Clinical Research Coordinator, UCSF Engin. Tech., Verly Life Sciences
- Junior Specialist, UC Berkeley Optometric Asst., Golden Gate Opt.
- Process Engineer, Illumina Research Asst., Innovative Genomics
- Research Fellow, ETH Zurich Scientific Lab Asst., Adv. Clinical Software Developer, IBM Software Engineer, Capital One Software Engineer, Google System Engineer Assoc., IRhythm Systems Engineer, Bio-Techne Technical Services, Epic Systems Wireless Engineer Intern, Kaiser

**Graduate Programs**

- Biological Sciences
- Biomedical Engineering
- Chemical Engineering
- Computer Science
- Genetics
- Medicine
- Molecular Biology
- Natural Resources Mgmt & Policy
- Neurobiology

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