PROFESSIONAL MASTER OF ENGINEERING PROGRAM

Biomedical Engineering Concentration

bioengine
BIOENGINEERING INNOVATION & ENTREPRENEURSHIP

Program Overview:

The University of California, Irvine (UCI) Professional Master of Engineering (M.Eng) program's Biomedical Engineering Concentration, also known as BioENGINE (BioEngineering, Innovation, & Entrepreneurship), is designed to provide rigorous and practical hands-on team-based training in biomedical innovation, entrepreneurship/intrapreneurship, and commercialization. BioENGINE will train students through experiential learning to become experts and leaders in developing biomedical devices and technologies.

Program Features:

- 3-course sequence focused on the innovation, building, and launching of a medical technology business.
- Dedicated staff and seminar course to facilitate job searches, industrial networking, and professional career development.
- Students choose 6 technical courses on timely, relevant biomedical engineering topics, taught by experts in the field.
- 2-quarter Capstone design course where interdisciplinary student teams design, build, and test new medical technology, with faculty and industry mentors.
- Regularly interact and network with industry through symposia, lectures, design projects, and company site visits.
- Earn a Master of Engineering degree from UCI in as soon as 9 months.

"The global medical devices market size is calculated at USD 586.2 billion in 2025 and is expected to reach around USD 1,022.50 billion by 2034, growing at a CAGR of 6.34%. North America held the largest share of the market in 2024. The region is at the forefront of technological advancements and home to many well-known medical device manufacturing companies."

Precedence Research (2025)

"The life science industry employed more than 60,000 workers in Orange County, CA and generated $7.5 billion in labor outcome and output of $45 billion."

Orange County Business Journal (2025)

"The average wage per worker in Orange County's life science industry is $116,000 annually."

California Life Sciences' 2024 Orange County Sector Snapshot

UC Irvine
Master of Engineering

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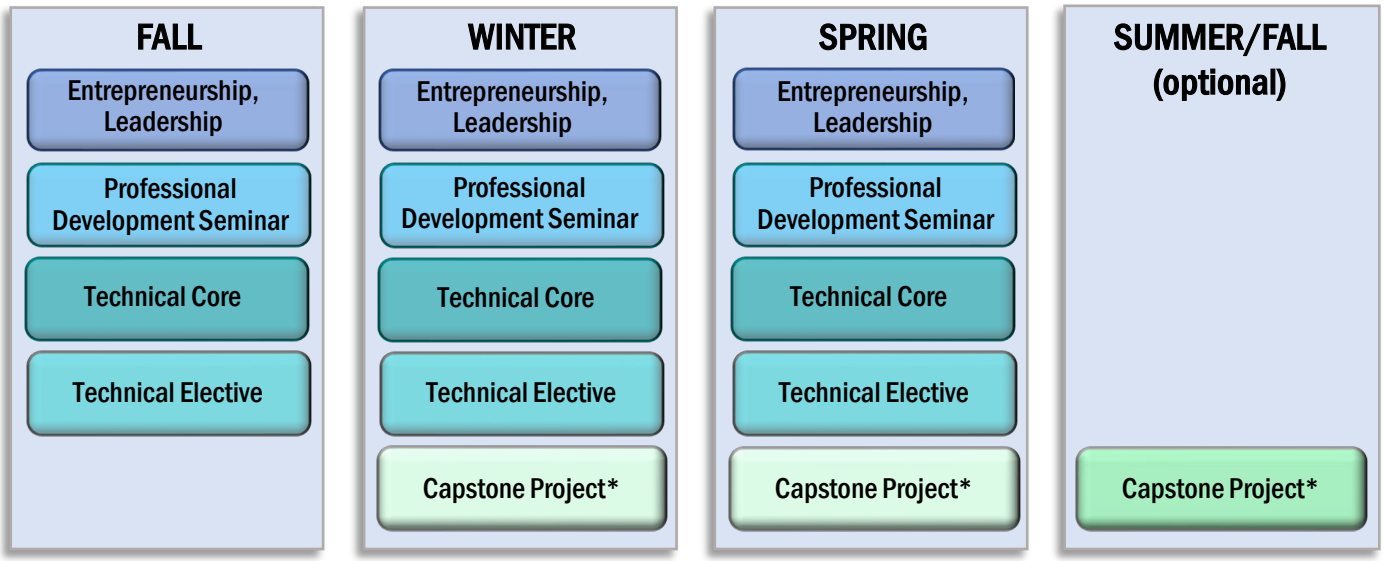

Engineering Leadership (3 quarters/12 units):

Topics include: product ideation, design, manufacturing, and marketing, writing proposals and business plans, successful team building, project management, revenue generation, intellectual property, and regulatory issues.

Technical Core Courses (1 per quarter[+]):

BME 201P Biomedical Big Data BME 202P Biomedical Imaging & Photonics
BME 295P Functional Medical Device Development (including regulatory, quality assurance, and manufacturing)

Technical Elective Courses[+]:

BME 210P Molecular and Cellular Engineering
BME 262P Microimplants
ENGR 295P Intro to Machine Learning
ENGR 295P Personalized Medical Devices
BME 240P Intro Clinical Medicine for Biomedical Engineering
BME 295P Intro to Orthopedic Implant Technology
BME 295P Brain Computer Interfaces
BME 295P Bioinstrumentation

[+]Course offerings subject to change

Capstone Project (* 2 quarters/ 8 units):

Hands-on design project where teams of students, mentored by faculty and industry representatives, will:

- Perform competitive analysis and develop market entry strategies towards new product commercialization.
- Define FDA design control requirements and product specifications; determine optimal solution.
- Design, fabricate, and test a prototype in UC Irvine's world class facilities and laboratories.
- Present project results to faculty and industry at the end-of-term Project Showcase.
- Option to do project Winter/Spring or Summer/Fall.

Apply online: https://meng.eng.uci.edu/
Contact us: m.eng@uci.edu, (949) 824-8090
For more information, scan QR code

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UC Irvine Samueli
Department of Biomedical Engineering

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Capstone Design Projects

- Mentored by UCI faculty and medtech companies.
- Multidisciplinary teams, 4 – 5 students.
- 6 months duration
- Perform competitive analysis.
- Define optimal requirements and specifications.
- Develop implementation plan.
- Design, fabricate, and test a prototype.
- Present project results at year-end showcase.




SAMPLE PROJECTS:

Traumatic Brain Injury Assessment System	Develop a low-cost, helmet-mounted sensor system to measure cranial impact during a bump or jolt to the head.
Pulsatile Stent Graft for Cardiovascular Disease	Design an actuating, low-power, wirelessly charged aortic stent graft to improve blood flow in the heart.
Portable Antibacterial Burn Wound Dressing Device	Design handheld device for contactless application of antibacterial nanofiber matrix for rapid wound healing at the point-of-care.
Wireless Smart Device for Knee Rehabilitation	Develop advanced camera system to expedite knee rehabilitation and preventative maintenance.
Pulsatile Aspiration for Ischemic Stroke Treatment	Develop algorithm that implements faster pulsatile clot aspiration for thrombectomy procedures.

Past/Present Capstone Industry Mentors:

- Hoag Orthopedics
- Masimo
- MIVI Neuroscience
- Surgalign
- Glidewell Dental
- Alcon
- Össur
- Mitsubishi
- Vena Vitals, Inc.
- DepressiStim
- Inari Medical
- Terumo Neuro
- Matregenix
- Omnica Corporation
- Epinex Diagnostics
- Edwards Lifesciences
- Johnson & Johnson
- Varian/Siemens Health
- Advantech
- PulseGraft

Access all Capstone projects:

sites.uci.edu/mengprojects/

Gain Hands-on, Real World Experience.

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Graduate Outcomes

"The BME M.Eng program was the perfect place for me to both further my education and my engineering skills at the same time. Through its extensive network and industry-focused curriculum, I felt well-equipped to take that next step in my career. The capstone project was one of the best experiences, giving me the opportunity to apply everything I learned in a real-world environment.

Nathan Do
Balt Group
BME M.Eng, Class of 2025

"Not only did UCI's BME M. Eng program strengthen my foundation in design and engineering, but it also taught me how to build meaningful connections, foster collaboration, and grow as both a team player and a leader. Thanks to this program, I feel more confident as an engineer and fully prepared to take on real-world challenges in the industry."

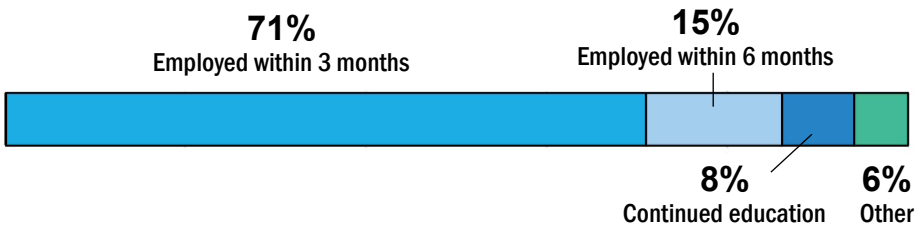
Sophia Sevic
Stryker Corporation
BME M.Eng, Class of 2025

"This program provided a home for me to grow as an engineer and as an individual. The faculty and staff ensured that each student was successful and well equipped for the business world. I am confident in saying that the M.Eng program helped me get to where I am now."

Eric Ortiz
Medtronic
BME M.Eng, Class of 2022

Employment Statistics

- 86% of graduates are employed within 6 months of graduation.
- 17% of BME M.Eng students work full time while in the program.
- Of those 17%, 75% were promoted after graduation.
- BME Concentration average annual base salary: $112,000.



Where are graduates employed?

- Applied Medical
- Johnson & Johnson Medtech
- Alcon
- Advanced Sterilization Products
- Adona Medical
- Aureka Biotechnologies, Inc.
- Barry-Wehmiller Design Group
- FUJIFILM Irvine Scientific
- Industrial Tech. Res. Inst. (ITRI)
- Precision Digital Health
- WuXi Biologics
- Boston Scientific
- NeoCare Innovations
- Edwards Lifesciences
- Terumo Neuro
- Metagenomi
- MIVI Neuroscience
- ImmunityBio, Inc.
- DeviceLab Inc.
- DNA Electronics, Inc.
- Project Pharma
- Teco Diagnostics, Inc.
- Sutra Medical
- NKGen Biotech, Inc.
- Bright Uro, Inc.
- Rekovar, Inc.
- Masimo
- Medtronic
- MdxHealth
- Matregenix
- Glidewell
- Pfizer
- Proteor
- SCAN US, Inc.
- Triton Bio, Inc.
- Vena Vitals, Inc.
- VivoSense, Inc.
- Stryker Corp.
- Balt Group

Job titles include:

Technical Product Manager, Research & Development Engineer, Regulatory Affairs Specialist, Global Product Development Engineer, Process Validation Engineer, Data Scientist, Biocompatibility Engineer, Manufacturing Engineer, Senior Consultant, R&D Clinical Engineer, Clinical Account Specialist