

INTERDISCIPLINARY GRADUATE EMPHASIS IN BIOENGINEERING

<http://www.bioengineering.ucsb.edu/academics>

University of California, Santa Barbara

Student Name: _____

Perm: _____

EMPHASIS IN BIOENGINEERING – 2025-26

Doctoral students from any department within the College of Engineering (Chemical Engineering, Computer Science, Electrical and Computer Engineering, Materials, and Mechanical Engineering) or from the following departments or programs within the MLPS Division of the College of Letters and Science (Chemistry and Biochemistry; Ecology, Evolution, and Marine Biology; Mathematics; Molecular, Cellular, and Developmental Biology; Physics; Psychological and Brain Sciences; Statistics and Applied Probability; and the Biomolecular Science and Engineering Program) may petition to add an emphasis in Bioengineering to their current doctoral degree program. Candidates pursuing the Bioengineering Emphasis must also fulfill the departmental and University requirements related to their home degree program. Note, some departments and programs already approve the BGE courses towards their departmental requirements, and in other cases CBE works with the student and home department to support new petitions.

Bioengineering is a rapidly growing discipline. The optional Bioengineering Graduate Emphasis prepares current doctoral students to undertake research at the interfaces of engineering, physical sciences, biology, and medicine. The emphasis is designed to complement a student's home department/program studies. It features a structured set of core lecture courses that are taught collaboratively by multidisciplinary faculty engaged in bioengineering related research. Additionally, the emphasis provides a community of support and a vehicle for exchange of ideas of ideas for enrolled students via two seminar series: an invited guest series and a student-led series fostering research exchange and professional development.

Admissions

Doctoral students in good academic standing (3.0 GPA or higher) are eligible to apply to the emphasis. The application should consist of the following:

1. A completed cover page to the application with an endorsement signature from the individual's current Ph.D. advisor (template available from CBE).
2. A one-page description of the doctoral research area.
3. A completed Graduate Division petition to add the emphasis with necessary signatures.
4. An unofficial copy of the student's graduate UCSB transcript to date.

Students must have a doctoral research area and/or advisor identified in the field of Bioengineering. Additionally, applicants are expected to have completed one or more foundational undergraduate or graduate courses in biochemistry and/or cell biology. A graduate admissions committee comprising 3 CBE faculty members will be responsible for reviewing petitions and admission materials.

| CORE BIOENGINEERING COURSES | | | |
|-----------------------------|---|-------|-------|
| COURSE # | COURSE NAME | UNITS | GRADE |
| BIOE 220A | Molecular Bioengineering | 3.0 | |
| BIOE 220B | Cellular Bioengineering | 3.0 | |
| Elective | Select elective(s) from approved list to meet 4.0 units requirement | 4.0 | |

SEMINAR REQUIREMENT - Students must complete the Bioengineering seminar courses (ENGR 225 and ENGR 230), three quarters each, with a grade of B or better.

| COURSE # | COURSE NAME | UNITS | GRADE |
|----------|----------------------------------|-------|-------|
| ENGR 225 | Current Topics in Bioengineering | 1.0 | |
| ENGR 225 | Current Topics in Bioengineering | 1.0 | |
| ENGR 225 | Current Topics in Bioengineering | 1.0 | |
| ENGR 230 | Bioengineering Student Seminar | 1.0 | |
| ENGR 230 | Bioengineering Student Seminar | 1.0 | |
| ENGR 230 | Bioengineering Student Seminar | 1.0 | |

DISSERTATION

The student's Ph.D. dissertation must be centrally focused on an issue that is appropriate to the Bioengineering emphasis. The dissertation committee must include at least one CBE faculty member or other CBE approved Academic Senate faculty member involved in bioengineering research. A student's advisor may count toward the bioengineering faculty member requirement. Students should be mindful of the committee requirements for their home degree program. If one of the first three committee members is not a CBE affiliated faculty member, then a fourth member having bioengineering expertise as described above must be added.

Valid Committee:

Approved Dissertation Topic: _____

VERIFICATION OF COMPLETION

EMPHASIS REQUIREMENTS SATISFIED (DATE): _____

EMPHASIS DIRECTOR SIGNATURE: _____

PRINT NAME: _____