

Bioengineering Advising & Registration Form – PhD Students

Name: _____ SID: _____ Email: _____ Academic Term Entered: _____

Faculty Advisor (sign): X _____

Date: _____

Grad Advisor (sign): X _____

Date: _____

Please fill out the form completely and submit to your faculty advisor and a graduate advisor prior to enrolling in courses.

Focus Areas: The Department of Bioengineering has 5 academic focus areas:

- A. Biomaterials and Regenerative Medicine
- B. Biomedical Imaging
- C. Computational Bioengineering
- D. Neuroengineering
- E. Molecular and Cellular Engineering

Quarterly Requirements: Students **must** enroll in BIEN 286 “Colloquium in Bioengineering” each quarter it is offered. Students conducting mentored research should enroll in 2 units of Special Topics under their advisor, 1-6 units of BIEN290, and 1-6 units of BIEN297/299 (prior/post Advancement). **12 units or more = full time**

Course Requirements: Students must satisfy the following course requirements. As most classes are only taught once a year, please consult the schedule of courses and consult with the Graduate Advisor when planning your schedule.

Bioengineering Required Courses

1. BIEN 401 – Fundamentals of Proposal Preparation and ethical Standards in Bioengineering – to be taken 1st year
2. BIEN 402 – Effective writing for bioengineering research publications – to be taken 2nd year
3. BIEN 201 – Mathematical methods for bioengineering – to be taken 1st year
4. BIEN 202 – Mathematical methods for bioengineering – to be taken 1st year
5. BIEN 211 – Advanced statistics and research design for bioengineering – to be taken 1st year

Bioengineering Core Courses

Students must complete 2 courses from their core focus (for example, 2 courses from focus A) their first year in order to be eligible to take written qualifiers. Additionally, they are required to take at least course from outside their core focus (for example, if their core focus is A, they are required to take 1 course from B, C, D, or E).

1. BIEN 223 – Engineering Analysis of Physiological Systems (Focus C)
2. BIEN 224 – Cellular and Molecular Engineering (Focus E)
3. BIEN 225 – Self-Organization in Engineered and Native Tissue (Focus E)
4. BIEN 234 – Orthopedic Regenerative Medicine and Mechanobiology (Focus A)
5. BIEN 236 – Nanomaterials and Regenerative Medicine (Focus A)
6. BIEN 242 – Advanced Biomedical Optical Imaging (Focus B)
7. BIEN 245 – Optical Methods in Biology, Chemistry and Engineering (Focus B)
8. BIEN 249 – Integration of Computational and Experimental Biology (Focus C)
9. BIEN 264 – Biotransport Phenomena (Focus C)
10. BIEN 270 – Transport with Reactions in Biological Systems (Focus C)
11. BIEN 275 – Magnetic Resonance Imaging (Focus B or D)
12. BIEN 276 – Introduction to Neuroimaging with MRI (Focus D)

Other Requirements

1. One bioscience class chosen from: BCH 210, BCH 211, BCH 212, BIOL/CMDB 200, BIOL/CMDB 201, BIOL 203, BIOL 221/MCBL 221/PLPA 226, or, with consent of instructor, BMSC 229, BMSC 230, BMSC 231, BMSC 232, BMSC 234, and BMSC 235 or NRSC 200A and 200B. Other courses may be substituted but must be approved by the Bioengineering Graduate Advisor.
2. One engineering class chosen from: BIEN 264, 270; CEE 210, 212, 238A; EE 206 (MSE227A), 240, 241, 243; ME 240A, 241A, 261, 266 (MSE 208), 267, 270 (MSE 238), 271, 272. Other courses may be substituted but must be approved by the Bioengineering Graduate Advisor.
3. Completion of 36 total units, 24 of which must be graduate-level (200-299). A maximum of 12 units of BIEN 297 and BIEN 299 may be used to satisfy the 36 unit requirement.

Additional courses may be required by the Advisory Committee depending on the student’s background and fields of interest.

Proposed Course Plan (___ Mark if revision)

Quarterly Requirements

Students **must** enroll in BIEN 286 “Colloquium in Bioengineering” each quarter it is offered. Students needing additional units for full time status (**12 units**) and conducting mentored research should enroll in 2 units of Special Topics under their advisor, 1-6 units of BIEN290, and 1-6 units of BIEN297/299 (prior/post Advancement).

1. Required Courses

Course #	Title	Units	Grade Mode	Year/Qtr	Pass?
BIEN 401	Fundamentals of Proposal Preparation... – taken 1 st year	4	Letter		
BIEN 402	Effective writing for bioengineering research publications – taken 2 nd year	4	Letter		
BIEN 201	Mathematical methods for bioengineering – taken 1 st year	4	Letter		
BIEN 202	Mathematical methods for bioengineering – taken 1 st year	4	Letter		
BIEN 211	Advanced statistics and research design for bioengineering – taken 1 st year	4	Letter		

Total 200-299 Units: 12 Completed: _____

2. Bioscience Course

One bioscience class chosen from: BCH 210, BCH 211, BCH 212, BIOL/CMDB 200, BIOL/CMDB 201, BIOL 203, BIOL 221/MCBL 221/PLPA 226, or, with consent of instructor, BMSC 229, BMSC 230, BMSC 231, BMSC 232, BMSC 234, and BMSC 235 or NRSC 200A and 200B. Other courses may be substituted but must be approved by the Bioengineering Graduate Advisor.

Course #	Title	Units	Grade Mode	Year/Qtr	Pass?
			Letter		

Total 200-299 Units: _____ Completed: _____

3. Engineering Course

One engineering class chosen from: CEE 210, 212, 238A; EE 206 (MSE227A), 240, 241, 243; ME 240A, 241A, 261, 266 (MSE 208), 267, 270 (MSE 238), 271, 272. Other courses may be substituted but must be approved by the Bioengineering Graduate Advisor.

Course #	Title	Units	Grade Mode	Year/Qtr	Pass?
			Letter		

Total 200-299 Units: _____ Completed: _____

4. Focus Courses

Students must complete two core Bioengineering courses from their focus

Course #	Title	Focus	Units	Grade Mode	Year/Qtr	Pass?
				Letter		
				Letter		

Total 200-299 Units: _____ Completed: _____

5. Breadth Focus Course

Students must complete one core Bioengineering course from outside their focus

Course #	Title	Focus	Units	Grade Mode	Year/Qtr	Pass?
				Letter		

Total 200-299 Units: _____ Completed: _____

6. Additional Courses

Completion of 36 total units, 24 of which must be graduate-level (200-299). A maximum of 12 units of BIEN 297 and BIEN 299 may be used to satisfy the 36 unit requirement.

Course #	Title	Units	Grade Mode	Year/Qtr	Pass?
			Letter		
			Letter		

Total 100-299 Units: _____ Completed: _____

Total 100-199 Units: _____ Completed: _____

Total 200-299 Units of 1, 2, 3, 4, 5, and 6 (must equal or exceed 24): _____

Total 100-299 Units of 1, 2, 3, 4, 5, and 6 (must equal or exceed 36): _____