### CORE REQUIREMENTS

**Bioinformatics Track**

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<th>Course</th>
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<tr>
<td>200</td>
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<tr>
<td>201 (PhD Only)</td>
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<td>205</td>
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<td>BINF #1</td>
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<tr>
<td>BME</td>
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<td>AMS 206B</td>
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**Biomolecular Engineering Track**

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<td>BINF</td>
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<td>AMS/CHEM/MCDB/METX #1</td>
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<td>#2</td>
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**Seminars**

**MS**

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**PHD**

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**Independent Study**

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**Lab Rotations**

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### Incompletes Pending

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### Failed Courses

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### Other Courses

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Biomolecular Engineering and Bioinformatics Graduate Program

Course Requirements
Both MS and PhD students must complete eight, 5-credit courses and one 3-credit research and teaching course. In addition, MS students must complete three seminar courses, while PhD students must complete five seminar courses. MS students must also complete one lab rotation, and PhD students must complete three research laboratory rotations (course 296) with different supervisors.

Core courses (5-credit) six are required

Bioinformatics Emphasis

- BME 205, Bioinformatics Models and Algorithms
- Two Biomolecular Engineering graduate courses from the bioinformatics list
- One Biomolecular Engineering graduate course from the biomolecular engineering list
- One graduate statistics course (Applied Mathematics and Statistics 206B recommended)
- One graduate course from MCD Biology, Chemistry and Biochemistry, or Microbiology and Environmental Toxicology

Biomolecular Engineering Emphasis

- BME 250, Molecular Biomechanics
- Two Biomolecular Engineering graduate course from the biomolecular engineering list
- One Biomolecular Engineering graduate courses from the bioinformatics list
- Two graduate courses from Applied Mathematics and Statistics, MCD Biology, Chemistry and Biochemistry, or Microbiology and Environmental Toxicology

Ethics Course (5-credit) one is required


Electives (5-credit) one is required

One graduate course consistent with the student's degree objectives. With preapproval by the graduate director, this elective may be an upper-division undergraduate course selected to improve background in areas not studied as an undergraduate. Independent or thesis research courses (297/299) cannot be counted as electives.

Students must choose courses with faculty guidance and approval to balance their preparation and make up for deficiencies in background areas. With consent of the graduate director, variations in the composition of the required courses may be approved.

Other Curriculum Requirements

BME 200, Research and Teaching in Bioinformatics, 3 credits

Seminars
MS students: a minimum of three seminar courses, including at least one quarter of the 2-credit BME seminar, 280B
PhD students: a minimum of six seminar courses, including at least two quarters of the 2-credit bme seminar, 280B

Before and after advancement, full-time Ph.D. students are required to enroll in at least one seminar course each quarter (e.g., 280 or 281), and must present the results of their ongoing research at least once each year. Because the intent of the seminar requirement is to ensure breadth of knowledge, lab group meetings (BME 281 courses) do not count for the seminar requirement.

Research Experience
MS students: one laboratory rotation (BME 296), and one quarter of independent study (BME 297).

PhD Students: three laboratory rotations (course 296), generally within the first 12 months. One of the laboratory rotations must be with a faculty supervisor who does wet-lab research, though the students rotation project may be purely computational.

Course Lists
The following are the bioinformatics and biomolecular engineering course lists. The lists are subject to change as courses and course content changes. The graduate office maintains the current list.

Bioinformatics list: 205, 211, 230, 235
Biomolecular Engineering list: 215, 250, 255