**BIOINFORMATICS: BIOENGINEERING, MS**

for the Master of Science in Bioinformatics, Bioengineering Concentration

This program is not currently accepting applications.

For additional details and requirements for all degrees, please refer to the department’s Graduate Studies Web site (http://bioengineering.illinois.edu) and the Graduate College Handbook (http://grad.illinois.edu/gradhandbook).

### Thesis Option

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>BIOE 599</td>
<td>Thesis Research (min applied toward degree)</td>
<td>4</td>
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<tr>
<td>BIOE 504</td>
<td>Analytical Methods in Bioeng</td>
<td>4</td>
</tr>
<tr>
<td>or BIOE 505</td>
<td>Computational Bioengineering</td>
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</tbody>
</table>

#### Computer Science and Informatics (choose one)

- CS 411 Database Systems
- CS 466 Introduction to Bioinformatics
- CS 473 Algorithms
- CPSC 565 Perl & UNIX for Bioinformatics
- IS 455 Database Design and Prototyping
- IS 542 Data, Statistical Models and Information

#### STAT 248 Statistical Computing

#### STAT 440 Statistical Data Management

#### STAT 448 Advanced Data Analysis

#### STAT 480 Data Science Foundations

#### STAT 525 Computational Statistics

#### Fundamental Bioinformatics (choose one)

- ANSC 542 Applied Bioinformatics
- ANSC 545 Statistical Genomics
- CHBE 571 Bioinformatics
- CPSC 567 Bioinformatics & Systems Biol
- CS 466 Introduction to Bioinformatics
- IB 467 Principles of Systematics
- MCB 432 Computing in Molecular Biology

#### Biology (choose one)

- ANSC 441 Human Genetics
- ANSC 444 Applied Animal Genetics
- ANSC 446 Population Genetics
- BIOP 401 Introduction to Biophysics
- BIOP 550 Biomolecular Physics
- CPSC 452 Advanced Plant Genetics
- CPSC 466 Genomics for Plant Improvement
- CPSC 563 Chromosomes
- CPSC 564 Molecular Marker Data Analyses
- CPSC 566 Plant Gene Regulation
- MCB 400 Cancer Cell Biology
- MCB 450 Introductory Biochemistry
- MCB 501 Advanced Biochemistry

### Non-Thesis Option

<table>
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<tbody>
<tr>
<td>BIOE 504</td>
<td>Analytical Methods in Bioeng</td>
<td>4</td>
</tr>
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<td>or BIOE 505</td>
<td>Computational Bioengineering</td>
<td></td>
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- CPSC 566 Plant Gene Regulation
- MCB 400 Cancer Cell Biology
- MCB 450 Introductory Biochemistry
- MCB 501 Advanced Biochemistry
- MCB 502 Advanced Molecular Genetics

One course in systems biology from departmental list (http://bioengineering.illinois.edu/graduate-programs/prospective-graduate-students/bioengineering-courses-illinois/#electives) 3

Elective Courses (http://bioengineering.illinois.edu/graduate-programs/prospective-graduate-students/bioengineering-courses-illinois/#electives) 9

**Total Hours** 32

Information listed in this catalog is current as of 12/2019
Elective Courses (http://bioengineering.illinois.edu/graduate-programs/prospective-graduate-students/bioengineering-courses-illinois/#electives) | 17
---|---
Total Hours | 36

### Other Requirements

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Description</th>
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<tbody>
<tr>
<td>Other Requirements and Conditions may overlap</td>
<td>A concentration is required. A minimum of 12 500-level credit hours overall applied toward the degree, with 8 hours being Bioengineering courses; a maximum of 2 hours of seminar courses can be counted towards these 12 hours. The non-thesis option is only available with permission of the advisor. Requirements include an additional 8 hours of elective courses which, with the approval of an advisor, may include supervised research experiences including internships and projects. Minimum GPA:</td>
</tr>
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</table>

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