BIOINFORMATICS: COMPUTER SCIENCE, MS

for the degree of Master of Science in Bioinformatics, Computer Science Concentration

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director of graduate studies: Brian P Bailey (bpbailey@illinois.edu)
overview of admissions & requirements: https://cs.illinois.edu/admissions/graduate/applications-process-requirements/
overview of grad college admissions & requirements: https://grad.illinois.edu/admissions/apply/
department website: https://cs.illinois.edu/
program websites: https://cs.illinois.edu/academics/graduate/ms-bioinformatics-program https://cs.illinois.edu/academics/graduate/ms-bioinformatics-program/ and https://www.informatics.illinois.edu/bioinformatics-masters/
informatics faculty affiliates: https://www.informatics.illinois.edu/faculty-affiliates/
college website: https://grainger.illinois.edu/
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The Department of Computer Science is one of the longest established computer science departments in the world and is consistently ranked as a top-5 graduate program.

The MS in Bioinformatics, Computer Science Concentration is an interdisciplinary degree that can be counted toward the PhD in Computer Science.

Admission Requirements

Applicants must hold a bachelor’s degree equivalent to that granted by the University of Illinois at Urbana-Champaign. The recommended background for students entering a Computer Science graduate degree program is a bachelor’s degree in computer science or computer engineering. The Graduate Record Examination (GRE) (http://www.ets.org/) general aptitude tests (Verbal, Quantitative, and Analytical) are no longer required. However, in some cases, GRE general scores may provide helpful supporting information.

Applicants to the Computer Science Concentration of the MS in Bioinformatics program must have a minimum grade point average (GPA) of 3.20 (A = 4.00) in their undergraduate studies (international GPAs are systematically converted) to be considered. The department reserves the right to admit applicants with lower GPAs under rare and exceptional circumstances. If an applicant also holds a graduate degree, the minimum GPA for that degree must be 3.00. Full details of the programs offered by Computer Science, admissibility, application procedures, and deadlines can be found at the department’s Prospective Graduate Student Information Web site (http://cs.illinois.edu/admissions/graduate/).

All applicants whose native language is not English are required to submit TOEFL (http://www.toefl.org/) or International English Language Testing System (IELTS) (http://www.ielts.org/) scores as evidence of English proficiency. Minimum admission requirements (https://grad.illinois.edu/admissions/instructions/04c/) are set by the Graduate College.

Financial Aid

Research assistantships and teaching assistantships (all of which include tuition and partial fee waivers) are awarded on a competitive basis. All applicants, regardless of US citizenship, whose native language is not English and who wish to be considered for teaching assistantships (one of the most common forms of financial aid for new graduate students in the department) must demonstrate spoken English language proficiency (http://grad.illinois.edu/admissions/taengprof.htm) by achieving a minimum score of 24 on the speaking subsection of the TOEFL IBT or 8 on the speaking subsection of the IELTS (academic exam). Students who are unable to take the IBT or IELTS are required to receive a minimum score of 5 on the EPI test (http://cte.illinois.edu/testing/oral_eng/epi_overview.html), offered on campus. All new teaching assistants are required to participate in the Graduate Academy for College Teaching (https://citl.illinois.edu/citl-101/teaching-learning/grad-academy-for-college-teaching/) conducted prior to the start of the semester.

Other Graduate Programs in the Department of Computer Science

degrees:

Computer Science, MCS (http://catalog.illinois.edu/graduate/engineering/computer-science-mcs/)
optional concentrations:
  - Computational Science and Engineering (http://catalog.illinois.edu/graduate/engineering/concentration/computational-science-engineering/)
Computer Science, MS (http://catalog.illinois.edu/graduate/engineering/computer-science-ms/)
optional concentrations:
  - Computational Science and Engineering (http://catalog.illinois.edu/graduate/engineering/concentration/computational-science-engineering/)
Computer Science, PhD (http://catalog.illinois.edu/graduate/engineering/computer-science-phd/)
optional concentrations:
  - Computational Science and Engineering (http://catalog.illinois.edu/graduate/engineering/concentration/computational-science-engineering/)
joint programs:
  - Computer Science, MCS & Architecture, MArch (http://catalog.illinois.edu/graduate/engineering_faa/joint-degree/computer-science-mcs-architecture-march/)
  - Computer Science, MCS & Law, JD (http://catalog.illinois.edu/graduate/engineering_law/joint-degree/computer-science-mcs-law-jd/)

The Department of Computer Science (CS) offers other graduate programs leading to the degrees of Master of Science and Doctor of Philosophy in Computer Science and a Master of Computer Science...
Bioinformatics: Computer Science, MS

The MCS program is also available online for students who are working full-time and unable to come to campus.

for the degree of Master of Science in Bioinformatics, Computer Science Concentration

The Computer Science concentration for the MS in Bioinformatics is an interdisciplinary degree that can be counted toward the Computer Science PhD.

For additional details and requirements refer to the department’s Graduate Degree Requirements (http://cs.illinois.edu/academics/graduate/ms-bioinformatics-program/) and the Graduate College Handbook (http://grad.illinois.edu/gradhandbook/).

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 411</td>
<td>Database Systems</td>
<td>4</td>
</tr>
<tr>
<td>CS 473</td>
<td>Algorithms</td>
<td>4</td>
</tr>
<tr>
<td>STAT 410</td>
<td>Statistics and Probability II</td>
<td>4</td>
</tr>
<tr>
<td>Fundamental Bioinformatics (choose one)</td>
<td>4</td>
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</tbody>
</table>

- 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) 4

- 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
- MCB 502 Advanced Molecular Genetics

CS electives, chosen from a departmental list of CS electives. (http://cs.illinois.edu/academics/graduate/ms-bioinformatics-program/)

One additional 4-credit hour graduate course (may be from the bioinformatics or biological science categories above) 4

Total Hours 36

Other Requirements

- Other Requirements and Conditions may overlap
- A minimum of 12 500-level credit hours overall.
- The minimum program GPA is 3.0

Information listed in this catalog is current as of 01/2021