BIOINFORMATICS: COMPUTER SCIENCE, MS

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

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 website (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 TOEFL iBT or IELTS are required to receive a minimum score of 5 on the OEAI test (https://linguistics.illinois.edu/testing/oeai/), 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.

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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/).

Code	Title	Hours
CS 411	Database Systems	4
CS 473	Algorithms	4
STAT 410	Statistics and Probability II	4
Fundamental Bioinformatics (choose one)		4
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		
CPSC 566	Plant Gene Regulation	
MCB 400	Cancer Cell Biology	
MCB 450	Introductory Biochemistry	
MCB 501	Advanced Biochemistry	
MCB 502	Advanced Molecular and Cell Biology	
CS electives, chosen from a departmental list of CS electives. (http://cs.illinois.edu/academics/graduate/ms-bioinformatics-program/)		12
One additional 4-credit hour graduate course (may be from the bioinformatics or biological science categories above)		4
Total Hours		**36**

Other Requirements

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

All degree requirements must be completed within five consecutive semesters (only fall and spring semesters are counted).

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1. Apply the essential concepts in algorithm design and analysis, and the ways in which those concepts impact bioinformatics.
2. Demonstrate the ability to read, analyze, discuss, and critique scientific advances and limitations described in the research literature.
3. Implement bioinformatics software tools and use these tools in biological data analysis.
4. Effectively and accurately communicate to an interdisciplinary audience in both oral and written formats.
5. Demonstrate an understanding of and ability to follow ethical standards in research and professional service.

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Computer Science
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(217) 333-4428
Computer Science email (academic@cs.illinois.edu)

Bioinformatics Program
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Informatics phone: (217)-244-1220
Bioinformatics Program website (https://www.informatics.illinois.edu/bioinformatics-masters/)
Bioinformatics Computer Science Program website (https://cs.illinois.edu/academics/graduate/ms-bioinformatics-program/)
Informatics Faculty Affiliates (https://www.informatics.illinois.edu/faculty-affiliates/)

Grainger College of Engineering
Grainger College of Engineering website (https://grainger.illinois.edu/)

Admissions
Computer Science Admissions & Requirements (https://cs.illinois.edu/admissions/graduate/applications-process-requirements/)
Graduate College Admissions & Requirements (https://grad.illinois.edu/admissions/apply/)