ILLINOIS INFORMATICS INSTITUTE

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Major: Bioinformatics
Degrees Offered: M.S.
Graduate Concentrations: Animal Sciences, Bioengineering, Crop Sciences, School of Information Sciences, Chemical and Biomolecular Engineering, Computer Science

Major: Informatics
Degrees Offered: Ph.D.

Graduate Degree Programs

The Illinois Informatics Institute (I3) at the University of Illinois offers two graduate degrees: a Ph.D. in Informatics, and Masters of Science in Bioinformatics. Both are interdisciplinary programs with many participating departments. Students can earn the Master of Science in Bioinformatics with a concentration in one of the following departments: Animal Sciences, Bioengineering, Crop Sciences, School of Information Sciences, Chemical and Biomolecular Engineering, Computer Science. The program is overseen by I3, but students are also members of the department of their concentration. Students can earn the Ph.D. in Informatics with specializations in Bioinformatics; Health and Medical Informatics; Spatial Informatics; Art and Cultural Informatics; Design, Technology, and Society; Data Analytics and Information Visualization; Cognitive Science and Language Processing.

Facilities

University research centers in this area include the Center for Biophysics and Computational Biology (http://www.life.uiuc.edu/biophysics) and an NIH Resource for Macromolecular Modeling and Bioinformatics (http://www.ks.uiuc.edu). The campus also offers state-of-the-art experimental bioinformatics facilities, including those in the Keck Center for Comparative and Functional Genomics (http://www.biotech.uiuc.edu) and the Institute for Genomic Biology (http://www.igb.illinois.edu). The National Center for Supercomputing Applications (http://www.ncsa.uiuc.edu) (NCSA), located at the University, offers opportunities for accessing, developing, and experimenting with state-of-the-art computational facilities for bioinformatics.

Master of Science in Bioinformatics

The M.S. degree can be taken in a thesis or non-thesis format, depending on the department. For either format, the research adviser must be affiliated with the Bioinformatics program. Departments may have requirements in addition to those below. See the departmental entries in this Program of Study for more information.

Thesis Option

4 hours of coursework from the approved list of biology courses (http://www.informatics.illinois.edu/academics/bioinformatics-ms/bioinformatics-ms-core-courses)
4 hours of coursework from the approved list of bioinformatics courses (http://www.informatics.illinois.edu/academics/bioinformatics-ms/bioinformatics-ms-core-courses)
4 hours of coursework from the approved list of computer science courses (http://www.informatics.illinois.edu/academics/bioinformatics-ms/bioinformatics-ms-core-courses)

Thesis Hours Required (min/max applied toward degree): 4-8
Total Hours 32 or 36

Other Requirements
Minimum Hours Required Within the Unit: 8
Minimum 500-level Hours Required Overall: 12
A concentration is required.

Non-Thesis Option

4 hours of coursework from the approved list of biology courses (http://www.informatics.illinois.edu/academics/bioinformatics-ms/bioinformatics-ms-core-courses)
4 hours of coursework from the approved list of bioinformatics courses (http://www.informatics.illinois.edu/academics/bioinformatics-ms/bioinformatics-ms-core-courses)
4 hours of coursework from the approved list of computer science courses (http://www.informatics.illinois.edu/academics/bioinformatics-ms/bioinformatics-ms-core-courses)

Total Hours 36

Other Requirements
Other requirements may overlap
A concentration is required.
Minimum Hours Required Within the Unit: 8
Minimum 500-level Hours Required Overall: 12

Admission

Applicants must hold a bachelor’s degree equivalent to that granted by the University of Illinois at Urbana-Champaign. The recommended background for graduate students entering the Bioinformatics degree program is a bachelor’s or master’s degree in life sciences, computer and mathematical sciences, or engineering, with a minimum of five

Information listed in this catalog is current as of 03/2017
hours of molecular and cell biology, six hours of general chemistry, nineteen hours of mathematics and statistics, and three hours of introduction to computing. Prerequisites vary somewhat for the different departmental concentrations. Students should view the web page of the specific department they wish to apply to for detailed information about admission criteria and degree requirements. Those links are below:

- Department of Animal Sciences (http://www.anosci.illinois.edu)
- Department of Bioengineering (http://bioengineering.illinois.edu) - Not currently accepting applications
- Department of Chemical and Biomolecular Engineering (http://chbe.illinois.edu) - Not currently accepting applications
- Department of Computer Science (http://cs.illinois.edu)
- Department of Crop Sciences (http://www.cropsci.illinois.edu)
- School of Information Sciences (http://ischool.illinois.edu)

Financial Aid

Fellowships, research assistantships, and teaching assistantships (all of which include tuition and partial fee waivers) are awarded on a competitive basis by the admitting department. All applicants, regardless of U.S. citizenship, whose native language is not English and who wish to be considered for teaching assistantships (the most common form of financial aid for new graduate students in the department) must submit a score of at least 50 on the Test of Spoken English (TSE) (http://www.grad.illinois.edu/admissions/taengprof.htm).

Doctor of Philosophy in Informatics

The Chair of the Governing Committee of the Informatics Ph.D. Program will appoint the supervising committee to approve each student’s program of study, which will be called the Advisory Committee (first half of studies) and then the Dissertation Committee (second half of studies). The membership of these committees should remain constant for each half of the student’s studies, except in unusual circumstances, but may change when it is constituted for the dissertation. In any case, changes to the supervising committees must be approved by the Chair of the Governing Committee. The supervising committee must contain faculty with expertise in both the Applications area and the Foundations area chosen by the student, including at least four faculty members affiliated with the Informatics Program. The supervising committee will provide each student with a review of his or her progress at the end of each academic year.

Entering with approved M.S. degree

INFO 500  Orientation Seminar (taken twice: once for 0 hours, once for 1 hour)  1
Research Practicum  8
INFO 510  Research Practicum (taken twice 4 hrs each)  8
Applications Courses (2 courses at the 500 level from approved list)  8
Foundations Courses (2 courses at the 500 level from approved list)  8
Electives  7
INFO 599  Thesis Research (32 min applied toward degree)  32

Total Hours  64

Other Requirements 1

Other requirements may overlap

Qualifying Exam Required  Yes
Preliminary Exam Required  Yes
Final Exam/Dissertation Defense Required  Yes
Dissertation Deposit Required  Yes
Minimum GPA:  2.75

1 For additional details and requirements refer to the degree requirements (http://www.informatics.illinois.edu/academics/admission), the appropriate department’s graduate handbook, and the Graduate College Handbook (http://www.grad.illinois.edu/gradhandbook).

Entering with approved B.S. degree

INFO 500  Orientation Seminar (taken twice: once for 0 hours, once for 1 hour)  1
Research Practicum  8
INFO 510  Research Practicum (taken twice 4 hrs each)  8
Applications Courses (2 courses at the 500 level from approved list)  8
Foundations Courses (2 courses at the 500 level from approved list)  8
Electives  7
INFO 599  Thesis Research (32 min applied toward degree)  32

Masters Degree - Students entering without a Masters degree approved by their Advisory Committee with be required to take 32 additional credit hours in 400 and 500 level courses approved by their committee.

Total Hours  96

Other Requirements 1

Other requirements may overlap

Qualifying Exam Required  Yes
Preliminary Exam Required  Yes
Final Exam/Dissertation Defense Required  Yes
Dissertation Deposit Required  Yes
Minimum GPA:  2.75

1 For additional details and requirements refer to the degree requirements (http://www.informatics.illinois.edu/academics/admission), the appropriate department’s graduate handbook, and the Graduate College Handbook (http://www.grad.illinois.edu/gradhandbook).

Admission

The admissions process will consist of a formal application, specifying experiences, courses, interests, and letters of recommendation. The Informatics PhD Program will admit graduate students who are approved by the Governing committee in conjunction with representatives of the Areas. With the approval of the appropriate committees, students may be admitted to the program with only a Bachelor's degree. They will work with their Advisory Committee to define appropriate courses to fulfill the 32 hours of Masters-level work. If they wish to receive a Masters degree, they will need to apply to a relevant department and meet the department’s existing Masters degree requirements. If they already hold a Masters degree approved by the IPP Governing Committee,
they will receive graduate credit for 32 hours. All applicants whose native language is not English must submit a minimum TOEFL score of 100 (IBT), 250 (CBT), or 600 (PBT); or minimum International English Language Testing System (IELTS) academic exam scores of 6.5 overall and 6.0 in all subsections. For those taking the TOEFL or IELTS, full admission status is granted for scores greater than 102 (TOEFL iBT), 253 (TOEFL CBT), 610 (TOEFL PBT), or 6.5 (IELTS). Limited status is granted for lesser scores and requires enrollment in English as a Second Language (ESL) courses based on an ESL Placement Test (EPT) taken upon arrival to campus.

Financial Aid

Fellowships, research assistantships, and teaching assistantships (all of which include tuition and partial fee waivers) are awarded on a competitive basis. All applicants, regardless of U.S. citizenship, whose native language is not English and who wish to be considered for teaching assistantships must demonstrate spoken English language proficiency by achieving a minimum score of 50 on the Test of Spoken English (TSE), 24 on the speaking subsection of the TOEFL iBT, or 8 on the speaking subsection of the IELTS. For students who are unable to take the TSE, iBT, or IELTS, a minimum score of 50 is required on the SPEAK test, offered on campus. All new teaching assistants are required to participate in the Graduate Academy for College Teaching conducted prior to the start of the semester.