ILLINOIS INFORMATICS INSTITUTE

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Prospective students may contact:
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Major: Bioinformatics
Degrees Offered: M.S.
Graduate Concentrations: Animal Sciences, Bioengineering, Crop Sciences, Library and Information Science, 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, Library and Information Science, 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

One biology course from approved list (http://www.informatics.illinois.edu/academics/bioinformatics-ms/bioinformatics-ms-core-courses) 4

CS 411 Database Systems 3 or 4
or CS 473 Fundamental Algorithms

One bioinformatics course from approved list (http://www.informatics.illinois.edu/academics/bioinformatics-ms/bioinformatics-ms-core-courses) 4

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

One biology course from approved list (http://www.informatics.illinois.edu/academics/bioinformatics-ms/bioinformatics-ms-core-courses) 4

CS 411 Database Systems 3 or 4
or CS 473 Fundamental Algorithms

One bioinformatics course from approved list (http://www.informatics.illinois.edu/academics/bioinformatics-ms/bioinformatics-ms-core-courses) 4

Total Hours 32-35

Other Requirements

Other requirements may overlap
A concentration is required.
Minimum Hours Required Within the Unit: 8
Minimum 500-level Hours Required Overall: 12
Non-thesis programs must require students to participate in a research experience supervised by a faculty member.

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 hours of molecular and cell biology, six hours of general chemistry,

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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.ansci.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)
• Graduate School of Library and Information Science (http://
  www.lis.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

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<th>Course</th>
<th>Hours</th>
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<td>INFO 500</td>
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<tr>
<td>INFO 510</td>
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<tr>
<td>Applications Courses (2 courses at the 500 level from approved list)</td>
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<tr>
<td>Foundations Courses (2 courses at the 500 level from approved list)</td>
<td>8</td>
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<tr>
<td>Electives</td>
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<td>INFO 599</td>
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<td>Total Hours</td>
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Other Requirements

Other requirements may overlap

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<tr>
<td>Qualifying Exam</td>
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<tr>
<td>Preliminary Exam</td>
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<tr>
<td>Final Exam/Dissertation Defense Required</td>
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<td>Dissertation Deposit Required</td>
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<td>Minimum GPA</td>
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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

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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.