PhD in Biomedical and Health Informatics

Admission Requirements

Applications are considered on an individual basis. In addition to the Graduate College minimum requirements, applicants must meet the following program requirements:

- **Prior Degrees** Master's degree in health informatics or related field is preferred. Transfer of graduate credits from another institution will be handled on a course-by-course basis. The complete prior credits transfer process is described on the [Graduate College website](https://www.uic.edu/). Exceptional applicants who have completed a Bachelor of Science degree in health informatics or a related field, and wish to pursue a PhD will be considered for “Direct PhD Admission.” Such students will pursue the PhD degree without the requirement of first completing a master's degree. Direct PhD Admission is competitive. For fullest consideration, any student seeking admission should adhere to the early deadlines listed on the Graduate College website.

- **Grade Point Average** At least 3.00/4.00 for the final 60 semester (90 quarter) hours of undergraduate study and for all graduate degrees. In addition to the previous requirements, the cumulative GPA for any graduate-level course work must be at least 3.00/4.00.

- **Tests Required** GRE General Test with a minimum score of 152 (56th percentile) on the verbal and 151 (56th percentile) on the quantitative sections. The GRE General Test is recommended for all applicants and required for financial aid applicants including those seeking assistantships, fellowships, and all BHIS stipends and tuition waivers; applicants with no prior master's degree; applicants holding a master's degree with a cumulative GPA less than 3.50/4.00; and applicants with degrees awarded outside of the United States and Canada.

- **Minimum English Competency Test Score** All international students are required to submit Test of English as a Foreign Language (TOEFL), IELTS (International English Language Testing System), or PTE-Academic scores.
  - **TOEFL** Applicants taking the iBT Test must have a minimum score of 95, with subscores of Reading 24, Listening 22, Speaking 24, and Writing 24. Applicants taking the revised Paper-Delivered Test must have a minimum score of 60, with subscores of Reading 19, Listening 17, Writing 21 OR.
  - **IELTS** 7.0, with subscores of 6.5 for all four subscores, OR.
  - **PTE-Academic** 54, with subscores of Reading 51, Listening 47, Speaking 53, and Writing 56.

- **Letters of Recommendation** Three required, must be on letterhead. Recommenders should explain the context in which they have worked with and know the person about whom they are writing a recommendation. Recommenders should explore the student’s scholarly abilities, professionalism, organizational skills, and provide any other insights into the applicant’s qualities that demonstrate the applicant’s suitability for work at the doctorate level.

- **Personal Statement** Required. The statement should address the applicant’s goals for graduate study, career development, teaching, and research experience.

- **Current Curriculum Vitae** Required. Include scholarly activities and publications to date.

- **Other Requirements** Successful completion of basic computer programming course, preferably Python. This can be fulfilled (with permission of the Director of Graduate Studies) through completion of a nationally recognized MOOC and submission of a signed course certificate as proof of completion. This prerequisite may be waived for those with comparable experience. Prerequisites HIM 486 and BHIS 406. Prerequisite courses are available online and are taught each semester, including summer session. BHIS 406 may be waived for applicants who have worked in an English-speaking healthcare facility, who are licensed clinicians, who have taken medical terminology within the past five years, or who pass proficiency exams. The BHIS 406 proficiency exam is in current use and is available through the Director of Graduate Studies.

- **Deadlines** Application deadlines for this program are listed on the [Graduate College website](https://www.uic.edu/).

Degree Requirements

In addition to the Graduate College minimum requirements, students must meet the following program requirements:

- **Minimum Semester Hours Required** 96 beyond the baccalaureate.

- **Course Work** Students entering with an MS in Health Informatics earned at UIC may be allowed a maximum of 32 semester hours toward the PhD, depending on the electives taken. These students will develop an academic course plan, with approval of their primary advisor, that ensures their completion of any remaining core courses required, as well as additional elective course work in one or both tracks to fulfill the remaining course semester hours required for the PhD.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
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<tbody>
<tr>
<td>AHS 511</td>
<td>Biostatistics I</td>
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<tr>
<td>BHIS 499</td>
<td>Information Sources in Biomedical &amp; Health Information Sciences</td>
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<tr>
<td>BHIS 501</td>
<td>Methods in Biomedical and Health Informatics I</td>
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<tr>
<td>BHIS 502</td>
<td>Methods in Biomedical and Health Informatics II</td>
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<td>BHIS 505</td>
<td>Ethics and Legal Issues in Health Informatics</td>
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<td>BHIS 507</td>
<td>Literature Reviews and Evidence Synthesis in Health Informatics</td>
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<td>BHIS 510</td>
<td>Health Care Information Systems</td>
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<tr>
<td>BHIS 531</td>
<td>Health Information Technology and Informatics in Interprofessional Collaborative Practice</td>
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<td>BHIS 591</td>
<td>Research Rotations in Biomedical and Health Informatics (2 hours required for the PhD)</td>
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<td>BHIS 592</td>
<td>Colloquium in Biomedical and Health Informatics (2 hours required for the PhD)</td>
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<tr>
<td>BHIS 595</td>
<td>Seminar in Biomedical and Health Information Sciences (2 hours required for PhD)</td>
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<td>GC 501</td>
<td>Scientific Integrity and Responsible Research</td>
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<tr>
<td>NURS 572</td>
<td>Research Design and Methods</td>
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Selectives (13–21 hours)
Select 13 to 21 hours in one of the following tracks:

**Track 1: Systems Science in BHI**
- AHS 512 Biostatistics II (Required)
- BHIS 509 Informatics for the Clinical Investigator
- BHIS 517 Healthcare Data Security and Cybersecurity Foundations
- BHIS 520 Health Information Systems Analysis and Design
- BHIS 527 Knowledge Management in Healthcare Organizations
- BHIS 529 Transforming Healthcare using Business Intelligence and Predictive Analytics
- BHIS 554 Health Informatics Business Intelligence Tools and Application
- BHIS 560 Health Care Systems and Personalized Medicine
- CS 421 Natural Language Processing
- CS 424 Visualization and Visual Analytics
- ECON 555 Health Economics I
- ECON 556 Health Economics II
- MATH 419 Models in Applied Mathematics

**Track 2: Social and Organizational Sciences in BHI**
- BHIS 504 Qualitative Methods and Health IT Evaluation
- BHIS 506 Health Information Technology Evaluation
- BHIS 508 Q Research Methodology – Qualitative Research
- BHIS 521 Process Innovation with Health Information Technology
- BHIS 525 Social and Organizational Issues in Health Informatics
- BHIS 534 Health Information Technology and Patient Safety
- BHIS 535 Organizational Dynamics and Health Informatics
- BHIS 543 Health Care Project Management
- BHIS 570 Human Factors and Cognition in Health Information Technology
- COMM 416 Conflict and Communication
- HPA 444 Strategic Planning and Budgeting/Finance
- HPA 451 Health Care Finance I
- IE 441 Ergonomics and Human Factors

**Examinations**
- **Preliminary Examination:** Required. A written and oral test of core competencies is required to evaluate the student's knowledge of the broad area of biomedical and health informatics and their specific content area. All students must take an examination prepared individually by the examination committee following the completion of all course work.
- **Dissertation Proposal Examination:** Required. Upon completion of the comprehensive preliminary exam, the dissertation proposal must be defended before the student's dissertation committee (committee approved by the Graduate College).
- **Dissertation** Required. Students must earn 40 to 48 semester hours in BHIS 599. Each student will be required to present two research seminars prior to graduation (mid-thesis and public PhD thesis presentation). Students must be registered during the semester of intended graduation.