

# Health Informatics PhD

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## COLLEGE OF PUBLIC HEALTH

Learn more about the Doctor of Philosophy in Health Informatics.

## About the Program

The Health Informatics PhD program prepares graduates for leadership roles in academic health systems, as well as in the pharmaceutical, payer and public health fields. Given the College of Public Health's diverse resources, this program incorporates interprofessional education, team science, global health, research, education, translational science and public health components into the curriculum and learner experience. Graduates are prepared for such roles as data scientist, informatics analyst, informatics director and academic faculty. Through in-person and hybrid courses, learners have access to faculty mentors; hands-on laboratory and technology infrastructure; and immersion in translational, interprofessional real-world projects.

The PhD program in Health Informatics follows the foundational domains for knowledge, skills and abilities of the American Medical Informatics Association (AMIA), while also allowing learners to collaborate with other disciplines across both the college and university to supplement their skills outside of health informatics. Core foundational concepts include informatics, tools for manipulating health data, research methods, project management, and implementation science and translation. This program includes course topics that cover electronic health records, health data exchange, standards and terminology, clinical decision support, clinical data mining, and natural language processing.

For those interested in studying health informatics who cannot commit to pursuing a doctoral degree, an MS in Health Informatics and a graduate certificate in Health Informatics that runs for a shorter course of seven-week terms are offered by the College of Public Health. Coursework completed for the certificate may be applied to the master's or doctoral degree.

**Time Limit for Degree Completion:** 7 years

**Campus Location:** Main

**Full-Time/Part-Time Status:** Full-time study is required unless permission is received from the PhD Program Director.

**Interdisciplinary Study:** Students are encouraged to develop programs of study that are interdisciplinary in nature, involving coursework across departments, schools and colleges. Research in affiliated units is encouraged and facilitated by the Program Director.

**Affiliation(s):** A number of centers and programs exist within the College of Public Health, Temple University, and the Temple University Health System that are designed to study, develop and evaluate interventions aimed at resolving significant public health problems (e.g., addiction, chronic disease care, ethnic and racial disparities in cancer, obesity, tobacco exposure, violence). These offer opportunities for research placements for doctoral students; assist students in developing papers for publication and presentation at conferences; provide professional socialization; help students define dissertation projects using existing funded studies; and may provide some funding in the form of Research Assistantships.

Faculty and doctoral students also are involved in research with affiliates in the Fox Chase Cancer Center, Fox School of Business and Management, Institute on Aging, Institute on Disabilities, Lew Klein College of Media and Communication, Lewis Katz School of Medicine, Public Health Law Research Program in the Beasley School of Law, School of Podiatric Medicine, and Temple University Health System.

**Job Prospects:** Graduates of the PhD program are prepared to become faculty members or researchers in colleges and universities or to hold positions related to health informatics in a wide range of organizations, including health foundations, health systems, pharmaceutical companies, and public health departments.

**Financing Opportunities:** Full-time PhD students generally receive financial support through fellowships or assistantships. Information on university-wide support opportunities can be found at <https://grad.temple.edu/admissions/costs-financial-aid-more/university-financial-support>.

Graduate assistantships are sponsored by the College of Public Health:

- Research Assistants (RAs) perform supervised research activities. Research assistantships are frequently supported by faculty grant funding, and it is anticipated the RAs will work with faculty members on new and continuing grant proposals and develop both research and grant-writing competencies.
- Teaching Assistants (TAs) may be assigned to assist in the teaching of courses, with activities that include grading examinations/papers or teaching laboratory sections. Some TAs independently teach undergraduate courses. The purpose, however, is to develop competencies in current pedagogies that prepare students for academic teaching careers.

RAs and TAs provide 20 hours of service per week. Both assistantships carry a stipend and tuition remission up to 9 credits per academic term within the prescribed course of study for the degree. Consideration for admission with an assistantship requires a description of research and teaching experience; statement of research and teaching goals; and identification of areas of interest, including identification of potential faculty mentors and articulation of career goals consistent with the mission and purpose of the Health Informatics PhD program.

Offers of admission are generally accompanied by a fellowship or assistantship offer. Students with full funding from another source (e.g., government funding or employer tuition remission) are given full consideration in the admission process. Self-funding is highly discouraged.

## Admission Requirements and Deadlines

### Application Deadline:

*Fall:* December 15

All applicants to the Health Informatics PhD program must apply via the Centralized Application Service for Public Health (SOPHAS). The system can be accessed at <https://sophas.liaisoncas.com/>.

All application materials must be received by the deadline in order to be reviewed by the PhD Admissions Committee. Admission is competitive, and students are admitted only once a year for fall matriculation. Applications are evaluated together after the deadline has passed. Applications that are completed after the deadline are held for review the following year. An important component of the admissions decision is the fit between the applicant's goals, experiences, and interests and the expertise of the faculty in the PhD program.

Applicants should check their application status on the SOPHAS portal often and inquire directly of SOPHAS about receipt of materials. For other questions, please contact the CPH Office of Admissions at [cph@temple.edu](mailto:cph@temple.edu) or 215-204-5200.

### Letters of Reference:

*Number Required:* 3

*From Whom:* Letters of recommendation should be obtained from evaluators who can provide insight into the applicant's academic abilities and talents, as well as comment on the applicant's aptitude for doctoral-level study and research. Recommendations from college/university faculty members are preferred.

**Coursework Required for Admission Consideration:** Applicants are expected to have completed coursework in health informatics. The following prerequisites, which do not count toward the PhD, must be satisfied, either through an MS degree or course equivalency:

Code	Title	Credit Hours
HIM 5101	Fundamentals of Health Informatics	3
HIM 5102	Applications of Computer Programming in Health Informatics	3
HIM 5129 or EPBI 5002	Health Data Analysis Biostatistics	3

Alternately, students may test out of the prerequisites or demonstrate completion of other equivalent graduate coursework.

\*EPBI 5002 is required without Biostatistics foundational skills.

For more information, contact the PhD Program Director.

**Master's Degree in Discipline/Related Discipline:** Nearly all students admitted to the program have a master's degree. Although a master's degree specifically in Health Informatics is not required, preference is given to applicants who have a background in the health informatics discipline.

Students accepted without a master's degree are required to complete foundational courses in health informatics prior to beginning doctoral coursework.

**Bachelor's Degree in Discipline/Related Discipline:** A baccalaureate degree is required, although it need not be in Health Informatics. Preference is given to applicants who have a background in health informatics.

**Statement of Goals:** In no more than 750 words:

- identify Health Informatics as the program for which you wish to be considered and why;
- describe important academic and research achievements and interests; and
- specify how your research interests relate to your ultimate career goals and to ongoing work by faculty members affiliated with the Health Informatics PhD program.

The match between faculty and student interests is important in the admissions decision. Be sure to articulate clearly the linkages among your training goals, the expertise of our faculty, and the training emphasis of the PhD program. For a description of faculty interests, visit the Health Services Administration and Policy Faculty webpage.

### Standardized Test Scores:

Applicants who earned their baccalaureate degree from an institution where the language of instruction was other than English, with the exception of those who subsequently earned a master's degree at a U.S. institution, must report scores for a standardized test of English that meet these minimums:

- TOEFL iBT: 79 (send officially to SOPHAS using the SOPHAS-specific TOEFL code 5688)
- IELTS Academic: 6.5
- PTE Academic: 53
- Duolingo: 110

**Resume:** Current CV required.

**Writing Sample:** Scholarly articles, technical reports or academic professional papers are desirable. Unless it is a published work, the writing sample should be no more than 10 pages.

**Laptop:** All incoming students in the College of Public Health are required to have a laptop. Academic programs in the college are technology intensive. They incorporate statistical and database analyses; utilize specialized tools for athletic training, kinesiology and physical therapy; stream audio and video for communication sciences; facilitate online interactive counseling for social work; and foster clinical experiences and online assessments. The laptop requirement enables the College of Public Health to improve opportunities for active learning and provide greater access to specialized software and required tools in and out of the classroom, better preparing students for the workforce. Learn more about device specifications and suggested vendors. Students can use excess financial aid (i.e., funds that are reimbursed after all tuition and fees are paid) to meet student needs, including the purchase of a laptop. Scholarships may also provide funding.

**Advanced Standing:** A student enrolled in the Health Informatics PhD program may apply for advanced standing credits for graduate coursework graded "B" or better from an accredited institution. Credits for courses taken as part of a master's degree are considered. Credits for thesis, fieldwork, clinical practice or directed projects/readings cannot be used for advanced standing credit. To be approved for advanced standing, the courses must be deemed appropriate as part of the student's training in the Health Informatics PhD program. The maximum number of advanced standing credits awarded is 9.

## Program Requirements

### General Program Requirements:

*Number of Credits Required Beyond the Baccalaureate: 45*

*Required Courses:*

Code	Title	Credit Hours
<b>Core Courses</b>		
HIM 5212	Application Development in Public Health	3
HIM 5299	Introduction to Language Processing and Text Mining for Health Professionals	3
HIM 8112	Advanced Clinical Decision Support Systems	3
HIM 8129	Advanced Health Data Analytics	3
HIM 8216	Applications of Machine Learning for Health Informatics	3
HRPR 5001	Current and Emerging Issues in Public Health and Health Professions <sup>1</sup>	0
<b>Research Methods</b>		
EPBI 8012	Multivariable Biostatistics	3
EPBI 8212	Grantsmanship in Health Research	3
Select one of the following:		3
HPM 8013	Research Methods in Health Policy	
HIM 8016	Principles and Practices of Health Informatics Research	
<b>Electives <sup>2</sup></b>		
Select electives in Health Informatics:		15
HIM 5114	Health Informatics Project Management	
HIM 5127	Privacy and Security: Protecting Healthcare Data	
HIM 5128	Health Data: Standards and Interoperability	
HIM 5213	Informatics Solution Design and Development for Health Data and Its Applications	
HIM 5256	Global Health Informatics	
HIM 9082	Independent Study in Health Informatics	
Select electives in Health Policy:		
HPM 5006	Political and Economic Aspects of Health	
HPM 5016	Public Health Advocacy	
HPM 8005	Theor Hlth Policy Making	

HPM 8008	Health Economics	
HPM 8014	Comparative Health Policy	
Select electives in Research Methods:		
EPBI 8201	Structural Equation Modeling	
EPBI 8204	Multilevel Modeling in Interdisciplinary Research	
EPBI 8208	Data Management and Analysis	
POLS 8002	Qualitative Research Methods	
SBS 8001	Research Methods in Public Health	
<b>Research Courses</b> <sup>3</sup>		<b>6</b>
HIM 9994	Health Informatics Preliminary Examinations	
HIM 9998	Dissertation Proposal Research for Health Informatics	
HIM 9999	Health Informatics Dissertation Research <sup>4</sup>	
<b>Total Credit Hours</b>		<b>45</b>

<sup>1</sup> This common College Core course is required of all incoming graduate students in the College of Public Health. It is available completely online and designed such that students can complete the modules at their own pace over the course of their degree program.

<sup>2</sup> Students select electives in consultation with the faculty advisor or PhD Program Director. With approval, electives from outside of the department can be taken. If HPM 8013 is taken as the required research methods course it may not be counted as an elective.

<sup>3</sup> The Graduate School requires that students complete a minimum of 6 credits that include HIM 9994, HIM 9998, and HIM 9999. Of the 6 credits, at least 2 credits must be earned in HIM 9999.

<sup>4</sup> Students enroll in HIM 9999 after their proposal is approved, taking at least 1 credit each term until the dissertation is defended and filed with the Graduate School. A minimum of 2 credits of HIM 9999 must be earned.

## Proposed Plan of Study Outlined by Year and Term

Year 1		Credit Hours
<b>Fall</b>		
HIM 5212	Application Development in Public Health	3
HIM 8112	Advanced Clinical Decision Support Systems	3
HIM 8129	Advanced Health Data Analytics	3
<b>Credit Hours</b>		<b>9</b>
<b>Spring</b>		
HIM 5299	Introduction to Language Processing and Text Mining for Health Professionals	3
HIM 8216	Applications of Machine Learning for Health Informatics	3
HRPR 5001	Current and Emerging Issues in Public Health and Health Professions <sup>1</sup>	0
Elective <sup>2</sup>		3
<b>Credit Hours</b>		<b>9</b>
<b>Year 2</b>		
<b>Fall</b>		
EPBI 8012	Multivariable Biostatistics	3
HIM 8016	Principles and Practices of Health Informatics Research	3
Elective <sup>2</sup>		3
<b>Credit Hours</b>		<b>9</b>
<b>Spring</b>		
EPBI 8212	Grantsmanship in Health Research	3
Elective <sup>2</sup>		3
Elective <sup>2</sup>		3
<b>Credit Hours</b>		<b>9</b>
<b>Year 3</b>		
<b>Fall</b>		
HIM 9994	Health Informatics Preliminary Examinations <sup>3</sup>	1
Elective <sup>2</sup>		3
<b>Credit Hours</b>		<b>4</b>

<b>Spring</b>		
HIM 9998	Dissertation Proposal Research for Health Informatics <sup>3</sup>	1
<b>Credit Hours</b>		<b>1</b>
<b>Year 4</b>		
<b>Fall</b>		
HIM 9999	Health Informatics Dissertation Research <sup>3,4</sup>	2
<b>Credit Hours</b>		<b>2</b>
<b>Spring</b>		
HIM 9999	Health Informatics Dissertation Research <sup>3,4</sup>	2
<b>Credit Hours</b>		<b>2</b>
<b>Total Credit Hours</b>		<b>45</b>

<sup>1</sup> This common College Core course is required of all incoming graduate students in the College of Public Health. It is available completely online and designed such that students can complete the modules at their own pace over the course of their degree program.

<sup>2</sup> In consultation with the faculty advisor or PhD Program Director, students select five approved electives within Health Informatics, Health Policy and/or Research Methods, as identified above. With approval, electives from outside of the department can be taken.

<sup>3</sup> The Graduate School requires that students complete a minimum of 6 credits that include HIM 9994, HIM 9998, and HIM 9999. Of the 6 credits, at least 2 credits must be earned in HIM 9999.

<sup>4</sup> Students enroll in HIM 9999 after their proposal is approved, taking at least 1 credit each term until the dissertation is defended and filed with the Graduate School. A minimum of 2 credits of HIM 9999 must be earned.

#### Minimum Grade to be Earned for All Required Courses: B-

#### Culminating Events:

##### Area Paper:

Prior to sitting for the preliminary examinations, students must have successfully published or written a publishable paper in their chosen area of research interest. The purpose of the paper requirement is to demonstrate critical and interpretive knowledge in health informatics, as well as a high proficiency in written communication and a capacity to contribute to generalizable knowledge in the field. The student must be the lead or sole author.

The paper can be written in any of a variety of formats, including a systematic review, an empirical paper, or a theoretical piece relevant to the field. The paper can be a peer-reviewed published or in-press article. Papers that are of publishable quality but have not yet been submitted or are under review for publication are also acceptable. A committee of departmental faculty members, exclusive of the student's advisor, determines if the published paper meets the writing requirement. The committee evaluates the paper and votes on whether the student has passed or failed. Students who fail the paper requirement are allowed to submit a revision by the end of the next term.

A student cannot advance to the preliminary examinations without passing the paper requirement. Failure to satisfactorily complete the area paper requirement within one term after initial submission can result in dismissal from the PhD program. Students entering the PhD program who have already published a peer-reviewed paper can request to waive this requirement by completing a waiver application and submitting it along with the published document to the PhD Program Director.

##### Preliminary Examinations:

After completing the paper requirement, students are required to take the preliminary examinations. Students meet with the PhD Program Director in January of their second year to discuss the exams. It is suggested that students form a study group that meets at least one day per week during the term prior to the examinations. The exams are offered in the Summer term and cover the core components of students' training in health informatics.

The preliminary examinations should be taken prior to initiating the third academic year in the program and within one term of completing all coursework. Students are required to meet with their faculty advisor to establish eligibility before the beginning of the term in which they plan to take the examinations. When eligibility has been confirmed, students request to be registered for HIM 9994 in the subsequent academic term with the faculty advisor or PhD Program Director.

In order to advance to doctoral candidacy, the student must pass a written preliminary examination based on the required coursework in the Health Informatics PhD program and its application to theoretical and practical problems. The examination is set by a group of faculty members who are familiar with the content of the core courses and critical review of Health Informatics research. The student has five days to complete the review after receiving the research topics. An oral exam, based on the student's response to the written exam and any material from the core courses, occurs after the student successfully passes the written exam and critical review.

The PhD Program Director coordinates the grading of the preliminary examinations. A committee of departmental faculty members review and score the examinations. Students who fail these exams may have one opportunity to take the examinations again. A second failure results in automatic dismissal from the PhD program.

##### Dissertation Proposal:

After passing the preliminary examinations, students may enroll in HIM 9998. Students must be enrolled for 1 credit of HIM 9998 each term until they file their dissertation proposal with the Graduate School.

All students must form a Doctoral Advisory Committee (DAC) with the approval of the Director of Graduate Studies. The DAC is composed of at least three Graduate Faculty members: two members, including the chair, must be from the PhD program faculty of the Department of Health Services Administration and Policy. The DAC Chair must be approved as doctoral graduate faculty by the Dean of the College of Public Health and by the Graduate School. The Chair is responsible for overseeing and guiding the student's progress; coordinating the responses of the Committee members; and informing the student and the Director of Graduate Studies annually of the student's academic progress.

To fulfill the requirements of HIM 9998, students must submit a dissertation proposal, successfully defend it orally before their Committee, apply for Institutional Review Board (IRB) approval for the proposed research, and submit the proposal to the Graduate School. Students may enroll in HIM 9998 for only two terms without permission. Students needing more time may, with the support of their advisor, formally petition the Director of Graduate Studies for an extension, although an extension is not guaranteed. Failure to meet these requirements can result in dismissal from the program.

Once the proposal is defended, the student is elevated to candidacy and eligible to register for dissertation credits.

#### *Dissertation:*

The doctoral dissertation is an original theory-based research study that makes a significant contribution to the field of Health Informatics. It should expand existing knowledge and demonstrate the student's mastery of theory and research methods, particularly within a concentration or specialty area. The research should be rigorous, while upholding the ethics and standards of the field. Students are expected to submit their dissertation study for publication and presentation to professional audiences.

To fulfill the dissertation requirement, students must prepare and orally defend the final dissertation in a public meeting. Students must be enrolled continuously in HIM 9999 until their dissertation is successfully defended. The Graduate School requires a minimum of 2 credits of HIM 9999. Students must be enrolled in the term that they graduate.

The Dissertation Examining Committee (DEC) consists of the DAC plus at least one additional external reviewer. The external reviewer must be doctorally prepared. If this person is not a member of the Temple University Graduate Faculty, they must be approved by the Director of Graduate Studies, the Dean of the College, and the Graduate School to take part in the final dissertation examination. The DEC evaluates the student's written dissertation and oral defense, including the student's ability to articulate orally the research question; methodological approach; primary findings; interpretation of the findings; and implications for theory, research and practice. The DEC votes to pass or fail the dissertation and the defense at the conclusion of the public presentation.

If a student needs to change a member of a committee, the new member must be approved by the Director of Graduate Studies and registered with the Graduate School.

Students who are preparing to defend their dissertation should confirm a time and date with their DEC and work with their department's administrative assistant to secure a room. This should be done at least one month in advance of the proposed date. The administrative assistant arranges the time, date and room within two working days. After the time, date and room are secured, the student must send to the Graduate School a completed "Announcement of Dissertation Defense" form, found in TUportal under the Tools tab within "University Forms." This must be submitted at least 10 working days before the defense. The department posts flyers announcing the defense, and the Graduate School lists the defense on its website.

## **Contacts**

### **Program Web Address:**

<https://www.temple.edu/academics/degree-programs/health-informatics-phd-hp-hlti-phd>

### **Department Information:**

Dept. of Health Services Administration and Policy  
Ritter Hall Annex, 9th Floor  
1301 Cecil B. Moore Avenue  
Philadelphia, PA 19122-6005  
hlthinfo@temple.edu  
215-204-8726

### **Submission Address for Application Materials:**

<https://sophas.liaisoncas.com/>

### **Department Contacts:**

#### *Admissions:*

CPH Office of Admissions  
cph@temple.edu

215-204-5200

*Program Director:*

Bari Dzomba, MS, PhD  
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*Chairperson:*

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