Health Informatics, M.S.

COLLEGE OF PUBLIC HEALTH (http://cph.temple.edu)

About the Program

Health Informatics is the intersection of healthcare, information science, and computer science. The M.S. in Health Informatics (MSHI) is an innovative, interdisciplinary, applied graduate degree program that addresses the intersection of healthcare and information technology to develop efficient systems, processes, and uses of health data across the continuum of healthcare delivery to improve patient care and advance individual and population health outcomes. The MSHI is focused on the resources, devices, and methods to optimize healthcare delivery. The program helps students develop the competencies and acquire the practical tools to succeed in today’s digital healthcare environment. Current students include physicians, nurses, therapists, data analysts, and information technology and allied health professionals. The degree is also well suited for individuals with no prior healthcare or information technology experience.

Time Limit for Degree Completion: 5 years

Campus Location: Temple University Center City (TUCC) is centrally located to regional rail. A large number of online course offerings extend the campus environment.

Full-Time/Part-Time Status: Part-time study is common among students as classes are offered on weekday evenings and the occasional weekend. A growing number of courses are available online.

Interdisciplinary Study: The degree program is interdisciplinary in nature with a focus on inquiry, insight, and innovation. The program builds an awareness of both clinical and technical challenges in the field.

Accreditation: The curriculum meets the curricular requirements of the Commission on Accreditation for Health Informatics and Information Management Education (CAHIIM), which is the accrediting body of the American Health Information Management Association (AHIMA).

Areas of Concentration: The MSHI offers three areas of concentration:

- Cybersecurity for Healthcare Professionals
- Healthcare Data Analytics
- Population Health Management

Job Prospects: Graduates of the program obtain positions in a variety of healthcare institutions or vendor settings in a wide range of positions such as project manager, electronic health record system implementation specialist, and health data analyst. A number of external organizations, including AHIMA, the American Medical Informatics Association (AMIA), and the Healthcare Information and Management Systems Society (HIMSS), conduct annual surveys of job prospects.

Non-Matriculated Student Policy: Students seeking a GRE waiver should consider taking classes on a non-matriculated basis. Non-matriculated students may take a maximum of 9 graduate-level credits. Upon completion of the credits, a student's academic performance is reviewed and a GRE waiver may be granted.

Transfer Credit: Graduate-level credits earned at another accredited institution may be evaluated during the application process. The maximum number of graduate credits a student may transfer is 6.

Financing Opportunities: Students in the MSHI program are generally working professionals. Therefore, funding for assistantships and academic internships is limited.

Admission Requirements and Deadlines

Application Deadline:

- Fall: March 1
- Spring: November 1

Application review is done on a rolling basis throughout the year. Late applications may be considered for admission.

APPLY ONLINE to this graduate program (http://www.temple.edu/apply/common/appcheck.asp).

Letters of Reference:

Number Required: 2
**From Whom:** Recommendations should be obtained from faculty and/or professionals familiar with the applicant's academic competence and/or professional work experience. Evaluators must use the official "Reference Report for Graduate Study," found at http://www.temple.edu/grad/admissions/documents/Web_GRAD_REFERENCE_REPORT.pdf. References should be emailed to hlthinfo@temple.edu.

**Bachelor’s Degree in Discipline/Related Discipline:** A baccalaureate degree or its equivalent, as recognized by Temple University, from an accredited post-secondary institution is required.

International students must provide official documentation that validates completion and conferral of a degree, diploma, and/or certificate. While not required, applicants are encouraged to submit their transcript(s) to World Education Services (WES) for evaluation. More information on international student admission requirements is available at http://www.temple.edu/grad/admissions/international.htm.

**Statement of Goals:** Demonstrate your professional writing ability as you address your interest in obtaining the degree. Submissions should address the impact of informatics in the field of health and healthcare as well as discuss the impact a graduate degree has on one's career.

**Standardized Test Scores:**
GRE: Required. Quantitative and verbal scores should be in the 50th percentile or above. A student may seek a GRE waiver by demonstrating academic proficiency by completing three courses in the program on a non-matriculated basis.

For applicants whose native language is not English, the TOEFL, IELTS, or PTE Academic exam is required:

- TOEFL: 79 iBT or 550 PBT minimum
- IELTS: 6.5 minimum
- PTE Academic: 53 minimum

**Resume:** Current resume required.

**Program Requirements**

**General Program Requirements:**

*Number of Credits Required Beyond the Baccalaureate:* 30

**Required Courses:**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>HIM 5101</td>
<td>Fundamentals of Health Informatics</td>
<td>3</td>
</tr>
<tr>
<td>HIM 5112</td>
<td>Health Information Systems: Design and Decision Making</td>
<td>3</td>
</tr>
<tr>
<td>HIM 5113</td>
<td>Database Administration for Health Informatics Professionals</td>
<td>3</td>
</tr>
<tr>
<td>HIM 5127</td>
<td>Privacy and Security: Protecting Healthcare Data</td>
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<td>Health Data: Standards and Interoperability</td>
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<td>HIM 5129</td>
<td>Health Data Analysis</td>
<td>3</td>
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<tr>
<td>HIM 9995</td>
<td>Capstone Project</td>
<td>3</td>
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<tr>
<td>HPM 5006</td>
<td>Political and Economic Aspects of Health</td>
<td>3</td>
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<tr>
<td>HRPR 5001</td>
<td>Current and Emerging Issues in Public Health and Health Professions</td>
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**Concentration Electives**

- 2 electives are taken in a chosen area of concentration. The approved electives are delineated in the grids below:

**Cybersecurity for Healthcare Professionals Concentration**

<table>
<thead>
<tr>
<th>Course</th>
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<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>MIS 5206</td>
<td>Protection of Information Assets</td>
<td>3</td>
</tr>
<tr>
<td>MIS 5209</td>
<td>Securing Digital Infrastructure</td>
<td>3</td>
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</tbody>
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**Healthcare Data Analytics Concentration**

<table>
<thead>
<tr>
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<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>HIM 5111</td>
<td>Technology for Healthcare Financial Management</td>
<td>3</td>
</tr>
<tr>
<td>HIM 5114</td>
<td>Health Informatics Project Management</td>
<td>3</td>
</tr>
</tbody>
</table>
Population Health Management Concentration

HIM 5106  Technology for Population Health  3
HPM 5122  Healthcare Quality and Safety  3
Total Credits  6

A graduate certificate in Health Informatics is also offered by the College of Public Health. For more information, visit http://bulletin.temple.edu/graduate/scd/cph/health-informatics-certificate/.

Culminating Events: Successful completion of coursework is required to earn the degree.

Contacts

Program Web Address:
https://cph.temple.edu/master-science-health-informatics-mshi

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

Mailing Address for Application Materials:
Dept. of Health Services Administration and Policy
ATTN: Division of HIM
1301 Cecil B. Moore Avenue, 524 Ritter Hall Annex
Philadelphia, PA 19122-6005

Department Contacts:

Admissions:
Rena Pacheco
Academic Coordinator
hlthinfo@temple.edu
215-204-5898

Graduate Program Director:
Thomas Martin, Ph.D.
trmartin@temple.edu
215-204-1892

Chairperson:
William Aaronson, Ph.D.
aaronson@temple.edu
215-204-8128

Courses

HIM 5003. Mgt Systems in Hlthcare. 3 Credit Hours.
Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

Repeatability: This course may not be repeated for additional credits.
HIM 5101. Fundamentals of Health Informatics. 3 Credit Hours.
This course provides an introduction to the history, reasoning, and development of systems focused on the generation, aggregation, and analysis of health data. Students will gain exposure to usability requirements - elements of design which impact selection - in addition to the issues impacting data liquidity in the healthcare system. The course will also consider the various types of health information systems that exist in organizations and serve as feeders to clinical repositories of information.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

Repeatability: This course may not be repeated for additional credits.

HIM 5106. Technology for Population Health. 3 Credit Hours.
Individuals and organizations are increasingly dependent on technology for the creation of information relevant to health status. Technology is being utilized to monitor health or social behavior or provide interventions in the form of information, alerts, or the provision of information to advanced health practitioners. This course is intended to provide students an opportunity to assess existing and emerging technologies as they relate to the delivery of healthcare or the maintenance of health status.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

Repeatability: This course may not be repeated for additional credits.

HIM 5111. Technology for Healthcare Financial Management. 3 Credit Hours.
This course examines the nexus of value based care, financial management, and healthcare payment. Students examine complex financial systems and explore the principles of payment as they apply to various types of health care settings. This course focuses on payment policy and reporting requirements, and the students become familiar with topics such as fraud and abuse, revenue cycle management, integration of clinical and financial systems, charge master data, and managerial implications of alternative payment models.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

Repeatability: This course may not be repeated for additional credits.

HIM 5112. Health Information Systems: Design and Decision Making. 3 Credit Hours.
This course provides an introduction to the effective management of health informatics systems. Students will gain an understanding of the technical foundations required for the successful management of health informatics systems and the impact of adopting initiatives relative to an organization’s operational and strategic goals. Students gain an exposure to industry benchmarking and appropriately valuing technology in healthcare. Topics related to the use of IT as a strategic resource, forming strategic health IT plans, the importance of stakeholders in health IT programs, and emerging healthcare technologies are explored.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

Repeatability: This course may not be repeated for additional credits.

HIM 5113. Database Administration for Health Informatics Professionals. 3 Credit Hours.
Modern life science organizations rely on databases for transaction management, data analysis, outcomes assessment, and to satisfy the internal needs of the organization as well as to satisfy regulatory, legal, and accrediting bodies. The goal of the course is to provide hands-on use of database management tools promoting a strong understanding of database design, data modeling and structured query language for data definition and data manipulation, and data analysis tools including pivot tables. In addition, the course will explore operational database systems versus analytic systems, the importance of database design on data integrity, data warehousing, and data mining at modern health science organizations. Data formats, collection, and integrity as they relate to continual performance improvement, with specific attention to practitioner performance, are also stressed.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

Repeatability: This course may not be repeated for additional credits.

HIM 5114. Health Informatics Project Management. 3 Credit Hours.
The development of interoperable electronic health record systems has resulted in increased systems integration, convergence, and complexity. Nearly half of all IT projects fail to meet budget, schedule, and functionality. The course provides a hands-on approach to systems analysis and management of health informatics (HI) projects. Students will be introduced to the concepts of managing HI projects by focusing on initiating, planning, executing, controlling, and closing projects in the context of topics such as integration, scope, timing, cost, quality, human resource, technology, communications, and risk and procurement. Students will also be provided an opportunity to analyze functional requirements for HI projects using a variety of process modeling approaches.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

Repeatability: This course may not be repeated for additional credits.
HIM 5127. Privacy and Security: Protecting Healthcare Data. 3 Credit Hours.
This course focuses on privacy and confidentiality and current legislative and health policy issues for electronic health record systems (EHRs). Ethical issues related to EHRs and advocacy of patients’ and consumers’ needs are explored. The course provides students with an understanding of regulatory requirements related to the protection of health information and introduces technical approaches to ensure compliance.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

Repeatability: This course may not be repeated for additional credits.

HIM 5128. Health Data: Standards and Interoperability. 3 Credit Hours.
This course provides an introduction to the principles of healthcare interoperability and provides foundation in healthcare standardization related to: privacy, security, clinical vocabularies, data messaging, architectural framework, data content, and the meaningful use of electronic health record systems (EHRs). The course explores the role of healthcare standards in supporting interoperability, patient care, research, and the practice of evidence-based medicine. National and international standards development efforts are also discussed.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

Repeatability: This course may not be repeated for additional credits.

HIM 5129. Health Data Analysis. 3 Credit Hours.
Healthcare delivery systems require capabilities to effectively generate, aggregate, and analyze data relevant to the optimal delivery of healthcare and maintenance of health. This course is intended to build on the competencies gained in previous courses surrounding the creation, structure and maintenance of clinical datasets, patient generated health data, and elements of the digital medical record. The course is designed to embrace team based approaches to solving complex issues in the healthcare delivery system. Students will use data visualization tools paired with quantitative data driven techniques which aid in addressing the challenges in the Triple Aim in healthcare. This course will enable the student to build a basic working knowledge of data analysis, dash boarding, and clinical intelligence platforms using appropriate methodologies.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

Repeatability: This course may not be repeated for additional credits.

Pre-requisites:
HIM 8013|Minimum Grade of B-|May not be taken concurrently.

HIM 8029. Graduate Seminar. 3 Credit Hours.
In this capstone seminar, students discuss current and emerging issues related to the EHR and to approaches to lifelong learning in the discipline and career of informatics. We hope that this is a fun, high-learning yet low-keyed, interactive way of approaching the more “practical” aspects of Informatics and Health IT.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

Repeatability: This course may not be repeated for additional credits.

Pre-requisites:
(HIM 8001|Minimum Grade of B-|May not be taken concurrently)
AND (HIM 8011|Minimum Grade of B-|May not be taken concurrently)
AND (HIM 8027|Minimum Grade of B-|May not be taken concurrently)
AND (HIM 8028|Minimum Grade of B-|May not be taken concurrently)
AND (MIS 5001|Minimum Grade of B-|May not be taken concurrently)
OR HIM 8012|Minimum Grade of B-|May not be taken concurrently
AND (MIS 5101|Minimum Grade of B-|May not be taken concurrently)
OR HIM 8013|Minimum Grade of B-|May not be taken concurrently
AND (MIS 5102|Minimum Grade of B-|May not be taken concurrently)
OR HIM 8014|Minimum Grade of B-|May not be taken concurrently

HIM 8050. Special Topics in Health Informatics. 3 Credit Hours.
This course provides students the opportunity to explore new and emerging areas in the field of health informatics, to gain a deeper understanding of a specific area within the field. This course may also be used to present areas of study not normally taught in the program.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

Repeatability: This course may be repeated for additional credit.
HIM 9082. Independent Study in Health Informatics. 1 to 3 Credit Hour.
This course provides students the opportunity to work independently under the direction of a faculty advisor to gain a deeper understanding of an area in Health Informatics.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

Repeatability: This course may be repeated for additional credit.

HIM 9995. Capstone Project. 3 Credit Hours.
The capstone course is the culminating class for students in the Health Informatics program. Students will create strategies and approaches that focus on various disciplines of health informatics such as topics relating to the Electronic Health Record, Health Information Exchange, Meaningful Use, and Ethical/Legal issues. In addition, students will analyze systems and evaluate potential decisions from the persona of senior level healthcare executives.

Department Restrictions: Must be enrolled in one of the following Departments: CPH:Health Serv Admin & Policy.
Field of Study Restrictions: Must be enrolled in one of the following Fields of study: Health Informatics.
Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.
Degree Restrictions: Must be enrolled in one of the following Degrees: Master of Science.
College Restrictions: Must be enrolled in one of the following Colleges: College of Public Health.

Repeatability: This course may not be repeated for additional credits.

Pre-requisites:
(HIM 8001|Minimum Grade of B-|May not be taken concurrently)
OR HIM 5101|Minimum Grade of B-|May not be taken concurrently)
AND (HIM 8013|Minimum Grade of B-|May not be taken concurrently)
OR HIM 5113|Minimum Grade of B-|May not be taken concurrently)
AND (HIM 8030|Minimum Grade of B-|May be taken concurrently)
OR HIM 5130|Minimum Grade of B-|May be taken concurrently)
AND (HIM 8027|Minimum Grade of B-|May be taken concurrently)
OR HIM 5127|Minimum Grade of B-|May be taken concurrently)
AND (HIM 8028|Minimum Grade of B-|May be taken concurrently)
OR HIM 5128|Minimum Grade of B-|May be taken concurrently)
AND (HIM 5006|Minimum Grade of B-|May not be taken concurrently)