Health Informatics, MS

Northeastern University's interdisciplinary Master of Science in Health Informatics was the first MS in the field and is now one of the few that is fully interdisciplinary between health science and computer science.

The program seeks to prepare students to address the combined clinical, technical, and business needs of health-related professionals. Students may opt to select a concentration to deepen their knowledge in a particular area. Successful students graduate with the knowledge of how technology, people, health, and the healthcare system interrelate; the ability to use technology and information management to improve healthcare delivery and outcomes; and the skills to communicate effectively among healthcare practitioners, administrators, information technology professionals, and patients.

Please visit Bouvé College Learning Outcomes (http://bouve.northeastern.edu/learning-outcomes/) for the specific student learning outcomes for this program.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

A grade of B– or higher is required in each course.

Core Requirements

Code	Title	Hours
HINF 5101	Introduction to Health Informatics and Health Information Systems	3
HINF 5105	The American Healthcare System	3

Program Options

Choose one of the following options:

- Health Informatics (Without Concentration) (p. 1)
- Health Informatics with Health Informatics Analytics Concentration (p. 2)
- Health Informatics with Personal Health Informatics Concentration (p. 3)

Program Credit/GPA Requirements

Minimum 33 total semester hours required
Minimum 3.000 GPA required

HEALTH INFORMATICS (WITHOUT CONCENTRATION)

Code	Title	Hours
Required Coursework in Addition to Core Requirements		
Business Management		
Complete two of the following:		6
HINF 5407	Business Application of Decision Support in Healthcare	
HINF 6201	Organizational Behavior, Work Flow Design, and Change Management	
HINF 6202	Business of Healthcare Informatics	
HINF 6215	Project Management	
or EMGT 5220	Engineering Project Management	
HINF 6335	Management Issues in Healthcare Information Technology	
HINF 6240	Improving the Patient Experience through Informatics	
PHTH 5226	Strategic Management and Leadership in Healthcare	
Health Informatics		
Complete two of the following:		6
HINF 5102	Data Management in Healthcare	
HINF 5110	Global Health Information Management	
HINF 5200	Theoretical Foundations in Personal Health Informatics	
HINF 5300	Personal Health Interface Design and Development	
HINF 5301	Evaluating Health Technologies	
HINF 6205	Creation and Application of Medical Knowledge	
HINF 6350	Public Health Surveillance and Informatics	

HINF 6404	Patient Engagement Informatics and Analytics	
HINF 6405	Quantifying the Value of Informatics	
PHTH 5232	Evaluating Healthcare Quality	
Technical		
Complete two of the following:		6
HINF 6220	Database Design, Access, Modeling, and Security	
HINF 6355	Interoperability Key Standards in Health Informatics	
HINF 6400	Introduction to Health Data Analytics	
PHTH 5202	Introduction to Epidemiology	
PHTH 5210	Biostatistics in Public Health	
PHTH 6210	Applied Regression Analysis	
PHTH 6400	Principles of Population Health 1	
PHTH 6440	Advanced Methods in Biostatistics	
One course from the following may count toward the technical core requirement:		
DA 5020	Collecting, Storing, and Retrieving Data	
DA 5030	Introduction to Data Mining/Machine Learning	
INSH 5301	Introduction to Computational Statistics	
INSH 5302	Information Design and Visual Analytics	
Capstone		
HINF 7701	Health Informatics Capstone Project	3
Electives		
Complete two of the following:		6
DA 5020	Collecting, Storing, and Retrieving Data	
DA 5030	Introduction to Data Mining/Machine Learning	
HINF 6345	Design for Usability in Healthcare	
INSH 5301	Introduction to Computational Statistics	
INSH 5302	Information Design and Visual Analytics	

HEALTH INFORMATICS ANALYTICS CONCENTRATION

Code	Title	Hours
Required Coursework in Addition to Core Requirements		
Business Management		
Complete two of the following:		6
HINF 6201	Organizational Behavior, Work Flow Design, and Change Management	
HINF 6202	Business of Healthcare Informatics	
HINF 6215	Project Management	
or EMGT 5220	Engineering Project Management	
HINF 6335	Management Issues in Healthcare Information Technology	
HINF 6240	Improving the Patient Experience through Informatics	
PHTH 5226	Strategic Management and Leadership in Healthcare	
Health Informatics		
Complete two of the following:		6
HINF 5102	Data Management in Healthcare	
HINF 5110	Global Health Information Management	
HINF 5200	Theoretical Foundations in Personal Health Informatics	
HINF 5300	Personal Health Interface Design and Development	
HINF 5301	Evaluating Health Technologies	
HINF 6205	Creation and Application of Medical Knowledge	
HINF 6350	Public Health Surveillance and Informatics	
HINF 6404	Patient Engagement Informatics and Analytics	
HINF 6405	Quantifying the Value of Informatics	
PHTH 5232	Evaluating Healthcare Quality	
Technical		
IE 6200	Engineering Probability and Statistics	4

OR 6205	Deterministic Operations Research	4
Capstone		
HINF 7701	Health Informatics Capstone Project	3
Elective		
Complete one of the following:		4
IE 5137	Computational Modeling in Industrial Engineering	
IE 5390	Structured Data Analytics for Industrial Engineering	
IE 5400	Healthcare Systems Modeling and Analysis	
IE 5640	Data Mining for Engineering Applications	
IE 6600	Computation and Visualization for Analytics	
IE 6700	Data Management for Analytics	
IE 7275	Data Mining in Engineering	

PERSONAL HEALTH INFORMATICS CONCENTRATION

Code	Title	Hours
Required Coursework in Addition to Core Requirements		
Health Informatics		
HINF 6205	Creation and Application of Medical Knowledge	3
Technical		
CS 5340	Computer/Human Interaction	4
Complete one of the following. Students must petition to take electives outside the approved list.		4
CS 5010	Programming Design Paradigm	
CS 5520	Mobile Application Development	
CS 5610	Web Development	
CS 6200	Information Retrieval	
Complete one of the following:		3
HINF 6220	Database Design, Access, Modeling, and Security	
HINF 6355	Interoperability Key Standards in Health Informatics	
Theory and Evaluation		
PHTH 5210	Biostatistics in Public Health [1]	3
Complete one of the following:		4
CS 6350	Empirical Research Methods (On campus only)	
HINF 5200	Theoretical Foundations in Personal Health Informatics	
Culminating Experience		
Complete one of the two options below.		6
Thesis Option		
Students must enroll in HINF 7990 for two semesters for a total of 6 semester hours with director approval only and under supervision of Personal Health Informatics faculty.		
HINF 7990	Thesis	
Capstone Option		
HINF 7701	Health Informatics Capstone Project	
Complete any course for a minumum of 3 semester from the Health Informatics (without concentration) curriculum, that has not been used in previous requirements.		

[1] Student may petition director to take a more advanced stats course, such as Applied Regression Analysis (PHTH 6210).