

# MASTER OF SCIENCE IN HEALTH SYSTEMS

The focus of the Health Systems is to develop, apply, and disseminate new knowledge with respect to the analysis, planning, implementation, demonstration, and evaluation of operational and managerial systems for the delivery of healthcare services to the public.

MS Health Systems Information

## Program Requirements

Code	Title	Credit Hours
<b>Core</b>		
HS 6000	Introduction to Healthcare Delivery	3
<b>Core Practice (Choose 1):</b>		<b>3</b>
HS 6400	Health Systems Practice	
ISYE 6320	Public Impact Applications of Operations Research and Management Science	
<b>Core Practice (Choose 1):</b>		<b>3</b>
HS 6200	Healthcare Financial Management	
ISYE 6225	Advanced Engineering Economy	
ISYE 6227	Introduction to Financial Engineering	
MGT 6000	Financial and Managerial Accounting I	
MGT 6060	Financial Management	
<b>Core Methodology (Choose 3):</b>		<b>9</b>
ISYE 6414	Statistical Modeling and Regression Analysis	
ISYE 6421	Biostatistics or BMED Biostatistics	
ISYE 6644	Simulation	
ISYE 6650	Probabilistic Models and Their Applications	
ISYE 6669	Deterministic Optimization	
ISYE 6679	Computational Methods in Optimization	
<b>Technical Electives (Choose 3):</b>		<b>9</b>
ARCH 6243	Evidence-Based Design	
ARCH 6271	Healthcare Design of the Future	
BIOL 6150	Genomics and Applied Bioinformatics	
BMED 6507	Medical Device Regulatory Requirements	
CS 6150	Computing For Good	
CS 6440	Information to Health Informatics	
CSE 6242	Data and Visual Analytics	
CSE 6730	Modeling and Simulation: Foundations and Implementation	
ECON 6150	Cost-Benefit Analysis	
ECON 6510	Economics of Health and Health Care	
HP 6601	Industrial Hygiene	
HTS 6122	History of Medicine	
ISYE 6202	Warehousing Systems	
ISYE 6405	Statistical Methods for Manufacturing Design and Improvement	
ISYE 6402	Time Series Analysis	
ISYE 6404	Nonparametric Data Analysis	
ISYE 6413	Design and Analysis of Experiments	

or ISYE 7 Advanced Design of Experiments		
ISYE 6416	Computational Statistics	
ISYE 6420	Introduction to Theory and Practice of Bayesian Statistics	
ISYE 6740	Computational Data Analysis: Learning, Mining, and Computation	
ISYE 6805	Reliability Engineering	
ISYE 7406	Data Mining and Statistical Learning	
PUBP 6001	Introduction to Public Policy	
<b>Free Elective <sup>1</sup></b>		<b>3</b>
<b>Total Credit Hours</b>		<b>30</b>

<sup>1</sup> ISYE 6739 cannot be used toward Free Elective

## Predictive Health Track Requirements

Code	Title	Credit Hours
<b>Core</b>		
Select 6 courses		18
HS 6000	Introduction to Healthcare Delivery	
ISYE 6669	Deterministic Optimization	
ISYE 6650	Probabilistic Models and Their Applications	
ISYE 6644	Simulation	
ISYE 6414	Statistical Modeling and Regression Analysis	
ISYE 7406	Data Mining and Statistical Learning	
Select one course		3
HS 6400	Health Systems Practice	
ISYE 6320	Public Impact Applications of Operations Research and Management Science	
Select one course		3
MGT 6000	Financial and Managerial Accounting I	
MGT 6060	Financial Management	
ISYE 6225	Advanced Engineering Economy	
ISYE 6227	Introduction to Financial Engineering	
HS 6200	Healthcare Financial Management	
<b>Health Systems Elective</b>		<b>3</b>
ARCH 6243	Evidence-Based Design	
ARCH 6271	Healthcare Design of the Future	
BIOL 6150	Genomics and Applied Bioinformatics	
BIOL 7023	Bioinformatics	
BMED 6507	Medical Device Regulatory Requirements	
ISYE 6421	Biostatistics or BMED Biostatistics	
BMED 6789	Technology Ventures	
BMED 7411	Mathematical Models in Biology & Medicine	
CS 6150	Computing For Good	
CS 6440	Information to Health Informatics	
ECON 6510	Economics of Health and Health Care	
HP 6601	Industrial Hygiene	
HTS 6122	History of Medicine	
<b>Free Elective <sup>1</sup></b>		<b>3</b>
<b>Total Credit Hours</b>		<b>30</b>

<sup>1</sup> ISYE 6739 cannot be used toward Free Elective

## Practicum Track Requirements

Code	Title	Credit Hours
<b>Core</b>		
HS 6000	Introduction to Healthcare Delivery	3
<b>Core Practice (Choose 1):</b>		<b>3</b>
HS 6400	Health Systems Practice	
ISYE 6320	Public Impact Applications of Operations Research and Management Science	
<b>Core Practice (Choose 1):</b>		<b>3</b>
HS 6200	Healthcare Financial Management	
ISYE 6225	Advanced Engineering Economy	
ISYE 6227	Introduction to Financial Engineering	
MGT 6000	Financial and Managerial Accounting I	
MGT 6060	Financial Management	
<b>Core Methodology (Choose 3):</b>		<b>9</b>
ISYE 6414	Statistical Modeling and Regression Analysis	
ISYE 6421	Biostatistics or BMED Biostatistics	
ISYE 6644	Simulation	
ISYE 6650	Probabilistic Models and Their Applications	
ISYE 6669	Deterministic Optimization	
ISYE 6679	Computational Methods in Optimization	
<b>Technical Electives (Choose 3):</b>		<b>9</b>
ARCH 6243	Evidence-Based Design	
ARCH 6271	Healthcare Design of the Future	
BIOL 6150	Genomics and Applied Bioinformatics	
BMED 6507	Medical Device Regulatory Requirements	
CS 6150	Computing For Good	
CS 6440	Information to Health Informatics	
CSE 6242	Data and Visual Analytics	
CSE 6730	Modeling and Simulation: Foundations and Implementation	
ECON 6150	Cost-Benefit Analysis	
ECON 6510	Economics of Health and Health Care	
HP 6601	Industrial Hygiene	
HTS 6122	History of Medicine	
ISYE 6202	Warehousing Systems	
ISYE 6405	Statistical Methods for Manufacturing Design and Improvement	
ISYE 6402	Time Series Analysis	
ISYE 6404	Nonparametric Data Analysis	
ISYE 6413	Design and Analysis of Experiments or ISYE 7 Advanced Design of Experiments	
ISYE 6416	Computational Statistics	
ISYE 6420	Introduction to Theory and Practice of Bayesian Statistics	
ISYE 6740	Computational Data Analysis: Learning, Mining, and Computation	
ISYE 6805	Reliability Engineering	
ISYE 7406	Data Mining and Statistical Learning	

PUBP 6001	Introduction to Public Policy	
<b>Internship Preparation Elective <sup>1</sup></b>		<b>3</b>
ISYE 6320	Public Impact Applications of Operations Research and Management Science	
<b>Practicum</b>		
COOP/INTN/ISYE Practicum		
<b>Total Credit Hours</b>		<b>30</b>

<sup>1</sup> ISYE Special Topics courses, as appropriate