

# M.S. in Business and Information Systems

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These degree requirements apply to on campus and online programs.

(30 Credits)

## M.S. in Business and Information Systems

Code	Title	Credits
<b>Business Core (2 courses)</b>		
IS 677	Information System Principles	3
or MIS 645	Information Technology and Competitive Advantage	
Select one of the following:		3
ACCT 615	Management Accounting <sup>1</sup>	
FIN 600	Corporate Finance I <sup>1</sup>	
HRM 601	Managing Organizational Behavior in Technology-Based Organizations <sup>1</sup>	
<b>Information Systems Core (6 courses)</b>		
IS 601	Web Systems Development	3
IS 631	Enterprise Database Management	3
IS 663	System Analysis and Design	3
IS 665	Data Analytics for Info System	3
IS 684	Business Process Innovation	3
Select one of the following:		3
IS 685	Enterprise Architecture and Integration	
IS 678	IT Service Management	
<b>Total Credits</b>		<b>24</b>

## Electives and Specialization Areas

We strongly encourage students to design and conduct a Masters Project or Thesis with an Informatics professor. If you are considering a Project or Thesis, please consult the professor early to determine the best electives to support your work. IS 700 can substitute for one elective and IS 701 for two electives, and be considered part of a specialization with the MS Advisor's permission.

Code	Title	Credits
Select two of the following electives or <sup>2</sup>		6
Select IS 700B and one of the following electives or		
Select IS 701 to substitute for both of your electives:		

Code	Title	Credits
<b>Data Analytics</b>		
Recommended Electives:		
IS 634	Information Retrieval	3
IS 687	Transaction Mining and Fraud Detection	3
IS 688	Web Mining	3
Additional Electives:		
CS 602	Java Programming	3
CS 632	Advanced Database System Design	3
CS 634	Data Mining	3
CS 636	Data Analytics with R Program	3
CS 644	Introduction to Big Data	3
CS 675	Machine Learning	3
CS 676	Cognitive Computing	3
CS 731	Applications of Database Systems	3
CS 732	Advanced Machine Learning	3
CE 602	Geographic Information System	3

MATH 644	Regression Analysis Methods	3
MATH 660	Introduction to statistical Computing with SAS and R	3
MATH 678	Statistical Methods in Data Science	3
MGMT 635	Data Mining and Analysis	3
MGMT 682	Business Research Methods I	3
PTC 628	Analyzing Social Networks	3
<b>Business Decision Making</b>		
IS 678	IT Service Management	3
ACCT 615	Management Accounting	3
FIN 600	Corporate Finance I	3
HRM 601	Managing Organizational Behavior in Technology-Based Organizations	3
MIS 648	Decision Support Systems for Managers	3
MIS 680	Management Science	3
MGMT 620	Strategic Management of Technological Innovation	3
MGMT 630	Decision Analysis with Quantitative Modeling	3
MGMT 650	Knowledge Management	3
MGMT 685	Operations Research and Decision Making	3
MGMT 688	Internet Law and Policy Issues	3
MRKT 620	Global Marketing Management	3
MRKT 645	Digital Marketing Strategy	3
<b>Healthcare Informatics</b>		
CS 639	Elec. Medical Records: Med Terminologies and Comp. Imp.	3
IE 686	Intro to Healthcare Systems	3
IE 687	Healthcare Enterprise Systems	3
IE 688	Healthcare Sys Perfor Modeling	3
PTC 640	Health Communications	3
R834 581	Health Systems and Policy	3
R834 582	Health Care Management	3
R834 659	Healthcare Finance	3
<b>User Experience Design</b>		
Recommended Electives:		
IS 661	User Experience Design <sup>4</sup>	3
IS 664	Customer Discovery <sup>4</sup>	3
IS 686	Pervasive Computing: An HCI Perspective	3
IS 735	Social Media	3
IE 661	Man-Machine Systems	3
IE 662	Cognitive Engineering	3
IE 664	Advanced Ergonomics	3
PTC 605	Elements of Visual Design	3
PTC 606	Advanced Information Design	3
PTC 629	Theory and Practice of Social Media	3
PTC 650	eLearning Design for Mobile	3
<b>Security and Network Management</b>		
IS 680	Information Systems Auditing	3
IS 681	Computer Security Auditing	3
IS 682	Forensic Auditing for Computing Security	3
CS 608	Cryptography and Security	3
CS 645	Security and Privacy in Computer Systems	3
CS 646	Network Protocols Security	3
CS 647	Counter Hacking Techniques	3
CS 652	Cognitive Cloud Networking - Architectures and Applications	3
CS 656	Internet and Higher-Layer Protocols	3

CS 696	Network Management and Security	3
CS 708	Advanced Data Security and Privacy	3
CS 755	Security and Privacy in Wireless Networks	3
CS 756	Mobile Computing and Sensor Networks	3
IT 620	Wireless Networks Security and Administration	3
IT 640	Network Services Administration	3
<b>Systems Analysis and Design</b>		
IS 676	Requirement Engineering	3
IS 683	Web Systems Development	3
IS 685	Enterprise Architecture and Integration	3
IS 661	User Experience Design	3
IS 664	Customer Discovery	3
CS 673	Software Design and Production Methodology	3
CS 683	Software Project Management	3
CS 684	Software Testing and Quality Assurance	3
CS 685	Software Architecture	3
EM 636	Project Management	3
EM 637	Project Control	3
MRKT 636	Design and Development of High Technology Products	3
<b>Web Systems</b>		
IS 634	Information Retrieval	3
IS 661	User Experience Design	3
IS 664	Customer Discovery	3
IS 688	Web Mining	3
IS 690	Web Services and Middleware	3
PTC 605	Elements of Visual Design	3
PTC 628	Analyzing Social Networks	3
PTC 632	Content Management and Information Architecture	3
<b>Build Your Own Specialization</b>		

Students may propose a coherent set of courses that have a common thread related to an area that you are interested in. The MS BIS advisor approves the proposed specialization.

- <sup>1</sup> Students who have taken an undergraduate equivalent of one of these courses may substitute up to one business core course with an additional elective.
- <sup>2</sup> Students may optionally choose 2 or more courses from a single area, which will constitute a specialization.
- <sup>4</sup> Students considering a Master's Project or Thesis with the User Experience specialization are encouraged to take both IS 661 User Experience Design and IS 664 Customer Discovery as electives.