M.S. in Information Systems

These degree requirements apply to on campus and online programs.

(30 Credits)

M.S. in Information Systems

S Core Courses	Code	Title	Credits
S 683	IS Core Courses		
IS 631 Enterprise Database Management 3 IS 665 Data Analytics for Info System 3 56 684 Business Process Innovation 3 Select one of the following User Experience courses 3 IS 661 User Experience Design IS 664 Customer Discovery Select one of the following Analytics courses: 3 IS 684 Information Retrieval IS 688 Web Mining DS 650 Data Wisualization and Interpretation MGMT 630 Decision Analysis with Quartitative Modeling MGMT 635 Data Mining and Analysis Electives and Specialization Areas ¹ 9 Select BY 700B or YWCC 691 and two of the following electives or 9 Select IS 700B or YWCC 691 and two of the following electives or 9 Select IS 700B or YWCC 691 and two of the following electives or 9 Select IS 700B or YWCC 691 and two of the following electives or 9 Select IS 700B or YWCC 691 and two of the following electives or 9 Select IS 700B or YWCC 691 and two of the following electives or 9 Select IS 700B or YWCC 691 and two of the following electives or </td <td>IS 601</td> <td>Web Systems Development</td> <td>3</td>	IS 601	Web Systems Development	3
IS 665 Data Analytics for Info System 3 IS 684 Business Process Innovation 3 Select one of the following User Experience occurses 3 IS 661 User Experience Design IS 664 Customer Discovery Select one of the following Analytics courses: 3 IS 634 Information Retrieval IS 688 Web Mining DS 650 Data Visualization and Interpretation MGMT 630 Decision Analysis with Quantitative Modeling MGMT 635 Data Mining and Analysis Electives and Specialization Areas! *** Electives and Specialization Areas! *** Select IS 701 and one of the following electives: *** Data Analytics *** IS 634 Information Retrieval IS 638 Web Mining CS 634 Information Retrieval IS 688 Web Mining CS 620 Java Programming CS 634 Data Mining CS 634 Data Mining CS 675 Machine Learning CS 676	IS 663	System Analysis and Design	3
IS 684 Business Process Innovation 3 Select one of the following User Experience courses 3 IS 681 User Experience Design IS 684 Customer Discovery Select one of the following Analytics courses: 3 IS 634 Information Retrieval IS 687 Transaction Mining and Fraud Detection IS 688 Web Mining DS 650 Data Visualization and Interpretation MGMT 635 Data Mining and Analysis Electives and Specialization Areas ** 9 Select three of the following electives or ** 9 Select 1S 707 and one of the following electives: 9 Select 1S 707 and one of the following electives: 9 Select 1S 707 and one of the following electives: 9 Select 1S 707 and one of the following electives: 9 Select 1S 707 and one of the following electives: 9 Select 1S 707 and one of the following electives: 9 Select 1S 707 and one of the following electives: 9 Select 1S 707 and one of the following electives: 9 Select 1S 707 and one of the following electives: 9	IS 631	Enterprise Database Management	3
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IS 661 User Experience Design Use 664 Customer Discovery Select one of the following Analytics courses: IS 634 Information Retrieval IS 687 Transaction Mining and Fraud Detection IS 688 Web Mining DS 650 Data Visualization and Interpretation MGMT 630 Decision Analysis with Quantitative Modeling MGMT 635 Data Mining and Analysis Electives and Specialization Areas Select three of the following electives or 2 Select IS 7071 and one of the following electives or Select IS 7071 and one of the following electives: Data Analytics IS 687 Transaction Mining and Fraud Detection IS 688 Web Mining CS 602 Java Programming CS 632 Advanced Database System Design CS 634 Data Mining CS 634 Data Mining CS 634 Data Analytics with R Program CS 644 Introduction to Big Data CS 676 Analytics with R Program CS 676 Cognitive Computing CS 6731 Applications of Database Systems CS 731 Applications of Database Systems CS 732 Advanced Machine Learning CE 602 Geographic Information System MATH 644 Regression Analysis Methods MATH 660 Introduction to statistical Computing with SAS and R MATH 660 Introduction to statistical Computing with SAS and R MATH 678 Statistical Methods in Data Science MGMT 635 Data Mining and Interpretation MGMT 632 Business Research Methods I DS 650 Data Visualization and Interpretation MGMT 632 Business Research Methods I DS 650 Data Visualization and Interpretation MGMT 630 Data Mining and Analysis	IS 684	Business Process Innovation	3
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IS 634	IS 664	Customer Discovery	
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IS 688 Web Mining DS 650 Data Visualization and Interpretation MGMT 630 Decision Analysis with Quantitative Modeling MGMT 635 Data Mining and Analysis Electives and Specialization Areas* Select three of the following electives or 2 9 Select IS 7008 or YWCC 691 and two of the following electives or Select IS 7008 or YWCC 691 and two of the following electives or Select IS 7008 or YWCC 691 and two of the following electives or Select IS 7008 or YWCC 691 and two of the following electives or Select IS 7008 or YWCC 691 and two of the following electives or Select IS 7008 or YWCC 691 and two of the following electives or Select IS 701 and one of the following electives or Select IS 702 and one of the following electives or Select IS 702 and one of the following electives or Select IS 703 and one of the following electives or Select IS 701 and one of the following electives or Select IS 702 and one of the following electives or Select IS 702 and Analytics with Rerough Detection Select IS 702 and Analytics with Rerough Detection IS 688 Web Mining CS 636 Data Analytics with R Program CS 644 Introduction to Big Data CS 675 Machine Learning CS 676 Cognitive Computing CS 731 Applications of Database Systems CS 732 Advanced Machine Learning CS 676 Cognitive Computing CS 673 Advanced Machine Learning CS 660 Geographic Information System MATH 644 Regression Analysis Methods MATH 660 Introduction to statistical Computing with SAS and R MATH 678 Statistical Methods in Data Science MGMT 635 Data Mining and Analysis MGMT 682 Business Research Methods I DS 650 Data Mining and Analysis MGMT 650 Knowledge Management Business Decision Making IS 677 Information System Principles	IS 634	Information Retrieval	
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MGMT 650 Knowledge Management Business Decision Making IS 677 Information System Principles	MGMT 682	Business Research Methods I	
Business Decision Making IS 677 Information System Principles	DS 650	Data Visualization and Interpretation	
IS 677 Information System Principles	MGMT 650	Knowledge Management	
	Business Decision Making		
IS 678 IT Service Management	IS 677	Information System Principles	
	IS 678	IT Service Management	

ACCT 615	Management Accounting
FIN 600	Corporate Finance I
HRM 601	Managing Organizational Behavior in Technology-Based Organizations
MIS 648	Decision Support Systems for Managers
MIS 680	Management Science
MGMT 620	Strategic Management of Technological Innovation
MGMT 630	Decision Analysis with Quantitative Modeling
MGMT 650	Knowledge Management
MGMT 685	
	Operations Research and Decision Making
MGMT 688 MGMT 710	Internet Law and Policy Issues
	Forecasting Methods for Business Decisions
MRKT 620	Global Marketing Management
MRKT 645	Digital Marketing Strategy
Healthcare Informatics	
CS 639	Elec. Medical Records: Med Terminologies and Comp. Imp.
IE 686	Intro to Healthcare Systems
IE 687	Healthcare Enterprise Systems
IE 688	Healthcare Sys Perfor Modeling
User Experience Design	
IS 661	User Experience Design
IS 664	Customer Discovery ³
IS 686	Pervasive Computing: An HCI Perspective
IS 735	Social Media
IE 661	Man-Machine Systems
IE 662	Cognitive Engineering
IE 664	Advanced Ergonomics
MRKT 636	Design and Development of High Technology Products
Security and Network Manage	ment
IS 680	Information Systems Auditing
IS 681	Computer Security Auditing
IS 682	Forensic Auditing for Computing Security
IS 687	Transaction Mining and Fraud Detection
CS 608	Cryptography and Security
CS 645	Security and Privacy in Computer Systems
CS 646	Network Protocols Security
CS 647	Counter Hacking Techniques
CS 651	Data Communications
CS 652	Cognitive Cloud Networking - Architectures and Applications
CS 656	Internet and Higher-Layer Protocols
CS 696	Network Management and Security
CS 708	Advanced Data Security and Privacy
CS 755	Security and Privacy in Wireless Networks
CS 756	Mobile Computing and Sensor Networks
IT 620	Wireless Networks Security and Administration
IT 640	Network Services Administration
Systems Analysis and Design	
IS 664	Customer Discovery
IS 676	
	Requirement Engineering Enterprise Architecture and Integration
IS 685	Enterprise Architecture and Integration
CS 673	Software Design and Production Methodology
CS 683	Software Project Management
CS 684	Software Testing and Quality Assurance

CS 685	Software Architecture
EM 636	Project Management
EM 637	Project Control
MRKT 636	Design and Development of High Technology Products
Web Systems	
IS 634	Information Retrieval
IS 664	Customer Discovery
IS 688	Web Mining
IS 690	Web Services and Middleware
Build Your Own Specialization	1
Students may select a coherent	set of courses that have a common thread related to an area that you are interested in

Total Credits 30

- Please consult the professor or academic advisor early to determine the best electives to support your work.
- Students may optionally choose 2 or more courses from a single area, which will constitute a specialization. Students will choose 3 electives if taking the course-only option, 2 electives if taking either IS 700B Master's Project or YWCC 691 Graduate Capstone Project, or 1 elective if taking IS 701B Master's Thesis. We strongly encourage students to design and conduct a Master Project or Master 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. A Master Project or Master Thesis can be considered part of a specialization.
- 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 one as a core course and the other as an elective.

MS in Information Systems – Professional Management Option (36 credits)

- All 7 MSIS core courses (21 credits) are required.
- Experiential Aspect: A one-semester IS Capstone Project (Either IS 700B or YWCC 691 3 credits), two-semester MS Thesis (IS 701 6 credits), or Co-Op experience (YWCC 590) is required.
- Electives: To meet the 36-credit requirement, students will take 9-15 credits of electives, where each elective course is 3 credits. The electives required will depend on which Experiential Aspect is chosen.
 - Students who take the IS Capstone Project (Either IS 700B or YWCC 691 3 credits) must take 4 elective courses: 1 course from the list of IS electives, and 3 courses from the list of Management electives.
 - Students who take the MS Thesis (IS 701 6 credits) must take 3 elective courses: 3 courses from the list of Management electives
 - Students who take the Co-Op experience (YWCC 590) must take 5 elective courses: 1-2 courses from the list of IS electives, 3-4 courses from the list of Management electives.

Code	Title	Credits
MS IS Core Course Requirements		21
IS 601	Web Systems Development	3
IS 663	System Analysis and Design	3
IS 631	Enterprise Database Management	3
IS 661	User Experience Design	3
IS 665	Data Analytics for Info System	3
IS 684	Business Process Innovation	3
Select one of the following Analytics	courses:	3
IS 634	Information Retrieval	
IS 687	Transaction Mining and Fraud Detection	
IS 688	Web Mining	
DS 650	Data Visualization and Interpretation	3
MGMT 630	Decision Analysis with Quantitative Modeling	3
MGMT 635	Data Mining and Analysis	3
Code	Title	Credits
IS Experiential Aspect		0-6 credits

Select one of the following Capstone or Co-op options. The Co-op does not count towards the degree credits. All Experiential options will be undertaken in collaboration with industry, and evaluated by a faculty member.

M.S. in Information Systems

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MRKT 645

MGMT 635

IS 700B	Master's Project	3
or YWCC 691	Graduate Capstone Project	
IS 701B	Master's Thesis	6
& 701B or IS 701C	and Master's Thesis Master's Thesis	
YWCC 590		1
1 WCC 590	Graduate Co-op Work Experience I	ı
Code	Title	Credits
Information System Electives		0-6
		credits
	e Project (either IS 700B or YWCC 691) choose 1 IS elective. Students who take the MS Thesis (IS 701)	
IS 634	ho take the Co-Op experience (YWCC 590) choose 1-2 IS electives. Information Retrieval	
IS 664		
IS 676	Customer Discovery	
IS 677	Requirement Engineering	
	Information System Principles	
IS 678	IT Service Management	
IS 680 IS 681	Information Systems Auditing	
	Computer Security Auditing	
IS 682	Forensic Auditing for Computing Security	
IS 685	Enterprise Architecture and Integration	
IS 686	Pervasive Computing: An HCI Perspective	
IS 687	Transaction Mining and Fraud Detection	
IS 688	Web Mining	
IS 735	Social Media	
IS 735	Title	Credits
		Credits 3-9
Code		
Code Management Electives	Title	3-9
Code Management Electives Students who take the IS Capstone	Title Project choose 1-2 Management electives. Students who take the MS Thesis (IS 701) choose 1-2	3-9 elective
Code Management Electives Students who take the IS Capstone Management electives. Students w	Title Project choose 1-2 Management electives. Students who take the MS Thesis (IS 701) choose 1-2 who take the Co-Op experience (YWCC 590) choose 1-3 Management electives.	3-9 elective
Code Management Electives Students who take the IS Capstone Management electives. Students w ACCT 615	Title Project choose 1-2 Management electives. Students who take the MS Thesis (IS 701) choose 1-2 who take the Co-Op experience (YWCC 590) choose 1-3 Management electives. Management Accounting	3-9 elective
Code Management Electives Students who take the IS Capstone Management electives. Students w ACCT 615 EM 636	Title Project choose 1-2 Management electives. Students who take the MS Thesis (IS 701) choose 1-2 who take the Co-Op experience (YWCC 590) choose 1-3 Management electives. Management Accounting Project Management	3-9 elective
Code Management Electives Students who take the IS Capstone Management electives. Students w ACCT 615	Title Project choose 1-2 Management electives. Students who take the MS Thesis (IS 701) choose 1-2 who take the Co-Op experience (YWCC 590) choose 1-3 Management electives. Management Accounting Project Management Corporate Finance I	3-9 elective
Code Management Electives Students who take the IS Capstone Management electives. Students w ACCT 615 EM 636 FIN 600 HRM 601	Title Project choose 1-2 Management electives. Students who take the MS Thesis (IS 701) choose 1-2 who take the Co-Op experience (YWCC 590) choose 1-3 Management electives. Management Accounting Project Management Corporate Finance I Managing Organizational Behavior in Technology-Based Organizations	3-9 elective
Code Management Electives Students who take the IS Capstone Management electives. Students w ACCT 615 EM 636 FIN 600 HRM 601 MIS 648	Title Project choose 1-2 Management electives. Students who take the MS Thesis (IS 701) choose 1-2 who take the Co-Op experience (YWCC 590) choose 1-3 Management electives. Management Accounting Project Management Corporate Finance I Managing Organizational Behavior in Technology-Based Organizations Decision Support Systems for Managers	3-9 elective
Code Management Electives Students who take the IS Capstone Management electives. Students w ACCT 615 EM 636 FIN 600 HRM 601 MIS 648 MIS 680	Title Project choose 1-2 Management electives. Students who take the MS Thesis (IS 701) choose 1-2 who take the Co-Op experience (YWCC 590) choose 1-3 Management electives. Management Accounting Project Management Corporate Finance I Managing Organizational Behavior in Technology-Based Organizations Decision Support Systems for Managers Management Science	3-9 elective
Code Management Electives Students who take the IS Capstone Management electives. Students w ACCT 615 EM 636 FIN 600 HRM 601 MIS 648 MIS 680 MGMT 620	Title Project choose 1-2 Management electives. Students who take the MS Thesis (IS 701) choose 1-2 who take the Co-Op experience (YWCC 590) choose 1-3 Management electives. Management Accounting Project Management Corporate Finance I Managing Organizational Behavior in Technology-Based Organizations Decision Support Systems for Managers Management Science Strategic Management of Technological Innovation	3-9 elective
Code Management Electives Students who take the IS Capstone Management electives. Students w ACCT 615 EM 636 FIN 600 HRM 601 MIS 648 MIS 680 MGMT 620 MGMT 630	Title Project choose 1-2 Management electives. Students who take the MS Thesis (IS 701) choose 1-2 who take the Co-Op experience (YWCC 590) choose 1-3 Management electives. Management Accounting Project Management Corporate Finance I Managing Organizational Behavior in Technology-Based Organizations Decision Support Systems for Managers Management Science Strategic Management of Technological Innovation Decision Analysis with Quantitative Modeling	3-9 elective
Code Management Electives Students who take the IS Capstone Management electives. Students w ACCT 615 EM 636 FIN 600 HRM 601 MIS 648 MIS 680 MGMT 620 MGMT 630 MGMT 641	Title Project choose 1-2 Management electives. Students who take the MS Thesis (IS 701) choose 1-2 who take the Co-Op experience (YWCC 590) choose 1-3 Management electives. Management Accounting Project Management Corporate Finance I Managing Organizational Behavior in Technology-Based Organizations Decision Support Systems for Managers Management Science Strategic Management of Technological Innovation Decision Analysis with Quantitative Modeling Global Project Management	3-9 elective
Code Management Electives Students who take the IS Capstone Management electives. Students w ACCT 615 EM 636 FIN 600 HRM 601 MIS 648 MIS 680 MGMT 620 MGMT 630 MGMT 641 MGMT 650	Title Project choose 1-2 Management electives. Students who take the MS Thesis (IS 701) choose 1-2 who take the Co-Op experience (YWCC 590) choose 1-3 Management electives. Management Accounting Project Management Corporate Finance I Managing Organizational Behavior in Technology-Based Organizations Decision Support Systems for Managers Management Science Strategic Management of Technological Innovation Decision Analysis with Quantitative Modeling Global Project Management Knowledge Management	3-9 elective
Code Management Electives Students who take the IS Capstone Management electives. Students water ACCT 615 EM 636 FIN 600 HRM 601 MIS 648 MIS 680 MGMT 620 MGMT 630 MGMT 641 MGMT 650 MGMT 682	Title Project choose 1-2 Management electives. Students who take the MS Thesis (IS 701) choose 1-2 who take the Co-Op experience (YWCC 590) choose 1-3 Management electives. Management Accounting Project Management Corporate Finance I Managing Organizational Behavior in Technology-Based Organizations Decision Support Systems for Managers Management Science Strategic Management of Technological Innovation Decision Analysis with Quantitative Modeling Global Project Management Knowledge Management Business Research Methods I	3-9 elective
Code Management Electives Students who take the IS Capstone Management electives. Students water ACCT 615 EM 636 FIN 600 HRM 601 MIS 648 MIS 680 MGMT 620 MGMT 630 MGMT 641 MGMT 650 MGMT 682 MGMT 685	Title Project choose 1-2 Management electives. Students who take the MS Thesis (IS 701) choose 1-2 who take the Co-Op experience (YWCC 590) choose 1-3 Management electives. Management Accounting Project Management Corporate Finance I Managing Organizational Behavior in Technology-Based Organizations Decision Support Systems for Managers Management Science Strategic Management of Technological Innovation Decision Analysis with Quantitative Modeling Global Project Management Knowledge Management Business Research Methods I Operations Research and Decision Making	3-9 elective
Code Management Electives Students who take the IS Capstone Management electives. Students water ACCT 615 EM 636 FIN 600 HRM 601 MIS 648 MIS 680 MGMT 620 MGMT 630 MGMT 641 MGMT 650 MGMT 682 MGMT 685 MGMT 688	Title Project choose 1-2 Management electives. Students who take the MS Thesis (IS 701) choose 1-2 who take the Co-Op experience (YWCC 590) choose 1-3 Management electives. Management Accounting Project Management Corporate Finance I Managing Organizational Behavior in Technology-Based Organizations Decision Support Systems for Managers Management Science Strategic Management of Technological Innovation Decision Analysis with Quantitative Modeling Global Project Management Knowledge Management Business Research Methods I Operations Research and Decision Making Internet Law and Policy Issues	3-9 elective
Code Management Electives Students who take the IS Capstone Management electives. Students water ACCT 615 EM 636 FIN 600 HRM 601 MIS 648 MIS 680 MGMT 620 MGMT 630 MGMT 650 MGMT 650 MGMT 685 MGMT 685 MGMT 688 MGMT 691	Title Project choose 1-2 Management electives. Students who take the MS Thesis (IS 701) choose 1-2 who take the Co-Op experience (YWCC 590) choose 1-3 Management electives. Management Accounting Project Management Corporate Finance I Managing Organizational Behavior in Technology-Based Organizations Decision Support Systems for Managers Management Science Strategic Management of Technological Innovation Decision Analysis with Quantitative Modeling Global Project Management Knowledge Management Business Research Methods I Operations Research and Decision Making Internet Law and Policy Issues Legal and Ethical Issues in a Digital World	3-9 elective
Code Management Electives Students who take the IS Capstone Management electives. Students water ACCT 615 EM 636 FIN 600 HRM 601 MIS 648 MIS 680 MGMT 620 MGMT 630 MGMT 641 MGMT 650 MGMT 682 MGMT 685 MGMT 688 MGMT 691 MGMT 710	Title Project choose 1-2 Management electives. Students who take the MS Thesis (IS 701) choose 1-2 who take the Co-Op experience (YWCC 590) choose 1-3 Management electives. Management Accounting Project Management Corporate Finance I Managing Organizational Behavior in Technology-Based Organizations Decision Support Systems for Managers Management Science Strategic Management of Technological Innovation Decision Analysis with Quantitative Modeling Global Project Management Knowledge Management Business Research Methods I Operations Research Methods I Operations Research and Decision Making Internet Law and Policy Issues Legal and Ethical Issues in a Digital World Forecasting Methods for Business Decisions	3-9 elective
Code Management Electives Students who take the IS Capstone Management electives. Students water ACCT 615 EM 636 FIN 600 HRM 601 MIS 648 MIS 680 MGMT 620 MGMT 630 MGMT 650 MGMT 650 MGMT 685 MGMT 685 MGMT 688 MGMT 691	Title Project choose 1-2 Management electives. Students who take the MS Thesis (IS 701) choose 1-2 who take the Co-Op experience (YWCC 590) choose 1-3 Management electives. Management Accounting Project Management Corporate Finance I Managing Organizational Behavior in Technology-Based Organizations Decision Support Systems for Managers Management Science Strategic Management of Technological Innovation Decision Analysis with Quantitative Modeling Global Project Management Knowledge Management Business Research Methods I Operations Research and Decision Making Internet Law and Policy Issues Legal and Ethical Issues in a Digital World	3-9 elective

Digital Marketing Strategy

Data Mining and Analysis