

## SPS Graduate Program Curricula 2015-16

The following program requirements apply to SPS graduate students that begin their program in the 2015-16 academic year. Please note that you are bound to the curriculum requirements in effect in the quarter you start taking courses, not the quarter you are admitted. While we will make every reasonable effort to accommodate students whose programs change, this is not always possible. Northwestern University reserves the right to modify or discontinue any program without notice.

Click on the links below to review the curriculum for your degree program.

Information Systems - On Campus or Distance Learning (Blended)

**Creative Writing (MA)** 

**Creative Writing (MFA)** 

Global Health - Distance Learning

Health Informatics- Distance Learning

Information Design and Strategy - Distance Learning

**Liberal Studies** 

**Literature** 

Medical Informatics- Distance Learning

Predictive Analytics- Distance Learning

Public Policy and Administration - On Campus and Distance Learning

Regulatory Compliance

**Sports Administration** 

Click on the links below to review the curriculum for your <u>certificate of advanced graduate study</u>.

**Advanced Data Science** 

**Information Systems** 

**Liberal Studies** 

**Literature** 

**Medical Informatics** 

**Public Policy and Administration** 

**Regulatory Compliance** 



## Information Systems – On Campus or Distance Learning (Blended) Master of Science Degree Requirements

Courses	Units
Core/Required courses	5 (4 for ABI)
CIS 413 Telecommunications and Computer Networks (not required for the Analytics and Business Intelligence specialization)	1
CIS 414 Object-Oriented Programming	1
CIS 417 Database Systems Design and Implementation	1
LEADERS 481 Foundations of Leadership	1
One of the following:	
CIS 498 Computer Information Systems Project - or -	1
CIS 590 Capstone Research (see the SPS Graduate Handbook for guidelines)	
Area of specialization	
(Choose 1 of the following 7 specializations)	
CIS 494 Project Management Concepts CIS 435 Practical Data Science Using Machine Learning CIS 436 Big Data Management and Analytics PREDICT 400 Math for Modelers PREDICT 401 Introduction to Statistical Analysis Plus Any two other electives from the MSIS curriculum	7
Database and Internet Technologies  CIS 494 Project Management Concepts CIS 419 Web Application Development CIS 431 Database Administration CIS 435 Practical Data Science Using Machine Learning Plus Any two other electives from the MSIS curriculum	6
Information Systems Security CIS 494 Project Management Concepts CIS 452 Fundamentals of Network Security CIS 455 Business Continuity and Disaster Recovery CIS 457 Management of Information Security Plus Any two other electives from the MSIS curriculum	6
Project Management CIS 494 Project Management Concepts CIS 495 IT Project Management CIS 496 Information Technology Finance and Communication Plus	6

Any three other electives from the MSIS curriculum	
Information Systems Management	
CIS 494 Project Management Concepts	
CIS 457 Management of Information Security	
CIS 460 Information Technology Management	6
CIS 465 Information Technology Strategy	
Plus	
Any two other electives from the MSIS curriculum	
Health Informatics (online only)	
MED_INF 402 or MHI 402 Introduction to Clinical Thinking	
MED INF 403 or MHI 403 Introduction to Medical/Health Informatics	
MED_INF 405 or MHI 405 HIT Integration, Interoperability and Standards	6
MED_INF 406 or MHI 406 Decision Support Systems and Health Care	
Plus	
Any two elective courses from the MSIS curriculum	
Medical Informatics (online only)	
MED_INF 402 or MHI 402 Introduction to Clinical Thinking	
MED INF 403 or MHI 403 Introduction to Medical/Health Informatics	
MED_INF 405 or MHI 405 HIT Integration, Interoperability and Standards	6
MED_INF 406 or MHI 406 Decision Support Systems and Health Care	
Plus	
Any two elective courses from the MSIS curriculum	
Information Systems	
CIS 494 Project Management Concepts	6
Plus	0
Any five elective courses from the MSIS curriculum	
Total required units	11

Analytics and Business Intelligence for IT Professionals	Units
Courses	
PREDICT 400 Math for Modelers	1
PREDICT 401 Introduction to Statistical Analysis	1
CIS 435 Practical Data Science Using Machine Learning	1
CIS 436 Big Data Management and Analytics	1
Total required units:	4

Database and Internet Technologies	Units
Courses	
CIS 414 Object-Oriented Programming	1
CIS 419 Web Application Development	1
CIS 435 Practical Data Science Using Machine Learning	1
and one of the following:	
CIS 431 Database Administration	1
CIS 436 Big Data Management and Analytics	1
Total required units:	4

Information Systems Management	Units
Courses	
CIS 494 Project Management Concepts	1
CIS 457 Management of Information Security	1
CIS 460 Information Technology Management	1
CIS 465 Information Technology Strategy	1
Total required units:	4

Information Systems Security	Units
Courses	
CIS 413 Telecommunications and Computer Networks	1
CIS 452 Fundamentals of Network Security	1
CIS 455 Business Continuity and Disaster Recovery	1
CIS 457 Management of Information Security	1
Total required units:	4



# Creative Writing (MA) Master of Arts Degree Requirements

Courses	Units
Three workshops in one genre: Fiction: MCW 413 Fiction Workshop Creative Nonfiction: MCW 461 Creative Nonfiction Workshop Poetry: MCW 411 Poetry Workshop	3
One cross-genre course: Fiction: MCW 479 Poetry for Prose Writers Creative Nonfiction: MCW 479 Poetry for Prose Writers Poetry: MCW 480 Prose Genres for Poets	1
Two graduate-level literature courses. These literature courses may be taken from LIT, ENGLISH, COMP_LIT, or other departments of literary study. <sup>1</sup>	2
Three graduate-level course electives. May not include more than 2 MCW 499 Independent Study courses. <sup>1</sup>	3
MCW 590 Capstone Writing and Revision (see the SPS Graduate Handbook for guidelines)	1
Total required units	10

<sup>&</sup>lt;sup>1</sup> Prior approval from the student adviser is required for registration in any courses offered by The Graduate School and IPLS courses. No approval is necessary for enrollment in MCW electives or LIT courses.



## Creative Writing (MFA) Master of Fine Arts Degree Requirements

Courses	Units
Seven workshops in one genre: Fiction: MCW 413 Fiction Workshop Creative Nonfiction: MCW 461 Creative Nonfiction Workshop Poetry: MCW 411 Poetry Workshop	7
One cross-genre course: Fiction: Poetry for Prose Writers Nonfiction: MCW 479 Poetry for Prose Writers Poetry: MCW 480 Prose Genres for Poets	1
MCW 570 Seminar on Teaching Creative Writing	1
One of the following teaching or publishing courses:  MCW 579 Practicum in Teaching Creative Writing  MCW 575 Journal Publishing: TriQuarterly Online  MCW 576 The Publishing Industry	1
Three graduate-level literature courses. These literature courses may be taken from LIT, ENGLISH, COMP_LIT, or other departments of literary study. <sup>1</sup>	3
Three graduate-level course electives. May not include more than 2 independent study courses. <sup>2</sup>	3
MCW 589 Capstone Preparation and Writing (see the SPS Graduate Handbook for guidelines)	1
MCW 590 Capstone Writing and Revision (see the SPS Graduate Handbook for guidelines)	1
Total required units	18

<sup>&</sup>lt;sup>1</sup> Prior approval from the student adviser is required for registration in any courses offered by The Graduate School and IPLS courses. No approval is necessary for enrollment in MCW electives or LIT courses. Students are limited to three 300-level course registrations.

<sup>&</sup>lt;sup>2</sup> Prior approval from the student adviser is required for registration in any courses offered by The Graduate School and IPLS courses. No approval is necessary for enrollment in MCW electives or LIT courses. Students are limited to three 300-level course registrations.



### Global Health - Distance Learning Master of Science Degree Requirements

Courses	Units
Core and required courses	9
MSGH 405 Foundations of Global Health and Global Burden of Disease	1
MSGH 408 Biostatistics and Epidemiology	1
MSGH 410 Research Methods	1
MSGH 417 Global Health Systems	1
MSGH 419 Bioethics and Human Rights	1
MSGH 421 Global Health, Globalization, and Public Policy	1
MSGH 427 Grant Writing, Development, and Fundraising	1
LEADERS 481 Foundations of Leadership	1
MSGH 580 Practicum Course (see the SPS Graduate Handbook for guidelines)	1
Elective courses	3
(choose any three MSGH electives)	
Total required units	12



## Health Informatics- Distance Learning Master of Science Degree Requirements

Courses	Units
Core	5
MED INF or MHI 401 American Health Care System	1
MED INF or MHI 403 Introduction to Health Informatics	1
MED INF or MHI 407 Legal, Ethical & Social Issues in Informatics	1
LEADERS 481 Foundations of Leadership	1
One of the following:	
MED INF or MHI 498 Capstone Project – or -	1
MHI 590 Thesis Research (see the SPS Graduate Handbook for guidelines)	1
Specialization (choose one specialization of 4 required courses)	4
Clinical Informatics Specialization Required Courses	
CIS 413 Telecommunications and Computer Networks	1
IDS 452 Introduction to Data and Analytics	1
MED INF or MHI 405 HIT Standards and Interoperability	1
MED INF or MHI 406 Decision Support Systems	1
Health Technology Specialization Required Courses	
MED INF or MHI 402 Introduction to Clinical Thinking	1
MED INF 404 Health Care Enterprise Operations or MHI 404 Health Care Organization Operations	1
MED INF or MHI 405 HIT Standards and Interoperability	1
MED INF or MHI 406 Decision Support Systems	1
Health Administration Specialization Required Courses	
MED INF or MHI 402 Introduction to Clinical Thinking	1
MED INF 404 Health Care Enterprise Operations or MHI 404 Health Care Organization Operations	1
MED INF or MHI 408 Information System Acquisition & Lifecycle	1
MHI 413 Consumer eHealth	1
Elective courses (choose any three electives corresponding to the declared specialization –see SPS website for approved course listing)	3
Total required units	12



### Information Design and Strategy - Distance Learning Master of Science Degree Requirements

Courses	Units
Core	9
MS_IDS 401 Models and Theories of User-Centered Design	1
MS_IDS 403 Effective Communication	1
MS_IDS 405 User Research	1
MS_IDS 407 Information and Content Strategy	1
MS_IDS 409 Data Management Principles	1
MS_IDS 411 Information Design and Architecture	1
MS_IDS 413 Visual Communication	1
LEADERS 481 Foundations of Leadership	1
One of the following:	
MS_IDS 498 Capstone Project – or -	1
MS_IDS 590 Thesis Research (see the SPS Graduate Handbook for guidelines)	1
Area of specialization	
(Choose 1 of the following 4 specializations)	
Data Science and Analytics  MS_IDS 452 Introduction to Data Collection and Analytics  MS_IDS 453 Introduction to Techniques of Predictive Analytics  MS_IDS 455 Data and Text Visualization	3
Learning Design  MS_IDS 422 Introduction to Learning Theory  MS_IDS 423 Instructional Design  MS_IDS 425 Learning Environment Design	3
Content Strategy MS_IDS 432 Advanced Writing Workshop MS_IDS 433 Social Media and Content Curation MS_IDS 435 Persuasion	3
Interdisciplinary Studies Select any three elective courses from the IDS specializations	3
Total Required Units	12



#### **Liberal Studies**

#### Master of Arts Degree Requirements

Please note: Courses completed in the degree program cannot be transferred to a corresponding certificate of advanced graduate study.

Courses	Units
IPLS 410 Introduction to Cultural Analysis	1
IPLS 401 Seminar in Liberal Studies I	1
Six graduate-level courses in liberal studies, humanities and related social sciences; may be applied toward a specialization (four courses) in any of the following: American Studies, Chicago Studies, History, Religious and Ethical Studies, or an individualized specialization. No more than three of these courses may be at the 300-level. 1	6
IPLS 590 Thesis Research (see the SPS Graduate Handbook for guidelines)	1
Total required units	9

#### Certificate of Advanced Graduate Study Requirements

American Studies, Chicago Studies, History, Religious and Ethical Studies, Interdisciplinary Studies	Units
Courses	
Any four courses in the area of specialization	4
The following may also count towards the total required units:	
Independent Study (499)	1
IPLS 590 Thesis Research (see the SPS Graduate Handbook for guidelines)	1
Total required units:	4

<sup>&</sup>lt;sup>1</sup> Prior approval from the student adviser is required for registration in any courses offered by The Graduate School. No approval is necessary for enrollment in LIT or IPLS courses. Students are limited to three 300-level course registrations.



#### Literature

#### Master of Arts Degree Requirements

Please note: Courses completed in the degree program cannot be transferred to a corresponding certificate of advanced graduate study.

Courses	Units
LIT 410 Introduction to Graduate Study	1
Seven graduate-level literature Courses (400–levels). No more than three of these courses may be at the 300-level. <sup>1</sup> If a student is interested in specializing in American Literature, British Literature, Comparative and World Literature, Literature, Film and Visual Studies, or an individualized specialization, the student must complete four courses within that specialization.	7
LIT 590 Thesis Research (see the SPS Graduate Handbook for guidelines)	1
Total required units	9

#### Certificate of Advanced Graduate Study Requirements

American Literature, British Literature, Comparative and World Literature, Film, Literature and Visual Culture, Interdisciplinary Studies	Units
Courses	
Any four literature-based courses in the area of specialization	4
The following may also count towards the total required units:	
Independent Study (499)	1
IPLS 590 Thesis Research (see the SPS Graduate Handbook for guidelines)	1
Total required units:	4

<sup>&</sup>lt;sup>1</sup> Prior approval from the student adviser is required for registration in any courses offered by The Graduate School. No approval is necessary for enrollment in LIT courses. Students are limited to three 300-level course registrations.



## Medical Informatics- Distance Learning Master of Science Degree Requirements

Courses	Units
Track courses	0-4
(determined upon admission)	0-4
Clinical Track	
CIS 413 Telecommunications and Computer Networks	1
CIS 417 Database Systems Design and Implementation	1
Technologist Track	
MED INF or MHI 401 American Health Care System	1
MED INF or MHI 402 Introduction to Clinical Thinking	1
Core courses	9
MED INF or MHI 403 Introduction to Medical Informatics	1
MED INF 404 Health Care Enterprise Operations or MHI 404 Health Care	1
Organization Operations	
MED INF or MHI 405 Health Care Information Tech Integration & Standards	1
MED INF or MHI 406 Decision Support Systems & Health Care	1
MED INF or MHI 407 Legal, Ethical & Social Issues in Informatics	1
MED INF or MHI 408 Medical Technology Acquisition & Assessment	1
MED INF or MHI 409 Introduction to Biostatistics	1
LEADERS 481 Foundations of Leadership	1
One of the following:	
MED INF or MHI 498 Capstone Project – or -	1
MED INF or MHI 590 Thesis Research (see the SPS Graduate Handbook for guidelines)	
Total required units	11 <sup>1</sup> -13

<sup>&</sup>lt;sup>1</sup> The minimum number of units required for the degree is 11. Students who have completed all other curriculum requirements and have fewer than eleven units should complete sufficient additional electives to meet this requirement.

Fundamentals of Medical Informatics	Units
Courses	
CIS 413 Telecommunications and Computer Networks	1
CIS 417 Database Systems Design and Implementation	1
MED INF or MHI 401 American Health Care System	1
MED INF or MHI 402 Introduction to Clinical Thinking	1
and any two of the following:	
MED INF or MHI 403 Introduction to Medical Informatics	1
MED INF 404 Health Care Enterprise Operations or MHI 404 Health Care Organization Operations	1
MED INF or MHI 405 Health Care Information Tech Integration & Standards	1
MED INF or MHI 406 Decision Support Systems & Health Care	1
MED INF or MHI 407 Legal, Ethical & Social Issues in Informatics	1
MED INF or MHI 408 Medical Technology Acquisition & Assessment	1
MED INF or MHI 409 Introduction to Biostatistics	1
Total required units:	6

Medical Informatics for Clinicians	Units
Courses	
CIS 413 Telecommunications and Computer Networks	1
CIS 417 Database Systems Design and Implementation	1
and any two of the following:	
MED INF 403 or MHI Introduction to Medical Informatics	1
MED INF 404 Health Care Enterprise Operations or MHI 404 Health Care Organization	1
Operations	1
MED INF 405 or MHI Health Care Information Tech Integration & Standards	1
MED INF 406 or MHI Decision Support Systems & Health Care	1
MED INF 407 or MHI Legal, Ethical & Social Issues in Informatics	1
MED INF 408 or MHI Medical Technology Acquisition & Assessment	1
MED INF 409 or MHI Introduction to Biostatistics	1
Total required units:	4

Medical Informatics for IT Professionals	Units
Courses	
MED INF or MHI 401 American Health Care System	1
MED INF or MHI 402 Introduction to Clinical Thinking	1
and any two of the following:	
MED INF or MHI 403 Introduction to Medical Informatics	1
MED INF 404 Health Care Enterprise Operations or MHI 404 Health Care Organization	1
Operations	1
MED INF or MHI 405 Health Care Information Tech Integration & Standards	1
MED INF or MHI 406 Decision Support Systems & Health Care	1
MED INF or MHI 407 Legal, Ethical & Social Issues in Informatics	1
MED INF or MHI 408 Medical Technology Acquisition & Assessment	1
MED INF or MHI 409 Introduction to Biostatistics	1
Total required units:	4



## Predictive Analytics- Distance Learning Master of Science Degree Requirements

Please note: Courses completed in the degree program cannot be transferred to a corresponding certificate of advanced graduate study.

Courses	Units
Core and required courses	10
PREDICT 400 Math for Modelers	1
PREDICT 401 Introduction to Statistical Analysis	1
PREDICT 402 Introduction to Predictive Analytics	1
PREDICT 410 Regression and Multivariate Analysis	1
PREDICT 411 Generalized Linear Models	1
PREDICT 413 Applied Time Series and Forecasting	1
PREDICT 420 Database Systems and Data Preparation	1
PREDICT 422 Practical Machine Learning	1
One of the following:	
PREDICT 475 Project Management - or -	1
PREDICT 480 Business Leadership and Communications	
One of the following:	
PREDICT 590 Thesis (see the SPS Graduate Handbook for guidelines) - or -	1
PREDICT 498 Capstone Project	
Elective courses (choose any two PREDICT electives, including 490 special topics and select CIS courses)	2
Total required units	12

### Certificate of Advanced Graduate Study Requirements

Advanced Data Science	Units
Courses:	
Any four PREDICT electives, including 490 special topics and select CIS courses	4
Total required units:	4



## Public Policy and Administration – On Campus and Distance Learning Master of Arts Degree Requirements

Courses	Units
Core and required courses	11
MPPA 401 Research Methods	1
MPPA 402 Elements of Public Finance & Budgeting	1
MPPA 403 Fundamentals of Public Administration	1
MPPA 404 Microeconomics for Public Policy and Administration	1
MPPA 405 Elementary Statistics for Research	1
MPPA 406 Analytic Methods for Public Policy Analysis	1
MPPA 407 Scope and Theory of Public Policy	1
MPPA 408 Public Organization Theory & Management (formerly Organizational Theory)	1
MPPA 409 Strategies for Effective Writing and Communication	1
One of the following:	
MPPA 498 Capstone Project – or -	1
MPPA 590 Thesis Research (see the SPS Graduate Handbook for guidelines)	
Specialization courses choose three electives <sup>1</sup> in one of these specialization areas, or the "generalist" category to take electives not in the same track	3
Public Policy	
Public Administration	
Global Policy	
Health Services Policy (available to on-campus students only)	
Total required units	13

<sup>&</sup>lt;sup>1</sup> Leaders 481 counts as an elective for students who wish to take it

Global Policy	Units
Courses	
MPPA 407 Scope and Theory of Public Policy	1
MPPA 440 International Institutions	1
MPPA 450 International Macroeconomics	1
MPPA 452 The Global City	1
Total required units:	4

Public Administration	Units
Courses	
MPPA 403 Fundamentals of Public Administration	1
MPPA 411 The Legislative Process	1
MPPA 413 The Nonprofit/NGO Sector	1
MPPA 417 Public Human Resources	1
Total required units:	4

Policy Analysis	Units
Courses	
MPPA 404 Microeconomics for Public Policy and Administration	1
MPPA 405 Elementary Statistics for Research	1
MPPA 406 Analytic Methods for Public Policy Analysis	1
MPPA 407 Scope and Theory of Public Policy	1
Total required units:	4

Public Policy	Units
Courses	
MPPA 407 Scope and Theory of Public Policy	1
MPPA 419 Strategic Policy Environment	1
MPPA 432 Intergovernmental Relations	1
MPPA 435 Regulatory Policy	1
Total required units:	4



#### **Regulatory Compliance**

### Master of Science Degree Requirements

Courses	Units
Core and required courses	6
MSRC 401 Quality Systems for Regulatory Compliance	1
MSRC 405 Applied Research and Writing	1
MSRC 409 or MED_INF 409-DL Biostatistics (now MHI 409-DL)	1
MSRC 435 Risk and Decision Management	1
LEADERS 481 Foundations of Leadership	1
MSRC 590 Thesis Research - or -	1
MPPA 498 Capstone Project	
Concentration area courses (choose one specialization of 4 courses)	4
Healthcare Compliance Track	
HC_COM 410 Healthcare Regulatory Environment	1
HC_COM 411 Healthcare Compliance Programs	1
HC_COM 412 Healthcare Regulatory Enforcement	1
HC_COM 413 Healthcare Billing Models and Systems	1
Clinical Research Track	
CLIN RES 400 Essentials of Initiating Clinical Research	1
CLIN RES 401 Responsible Conduct of Research	1
QARS 450 Medical Device Regulations or QARS 460 Drug and Biologics Regulations	1
CLIN RES 403 Clinical Research Design and Methodology	1
Quality Systems Track	
QARS 420 Practical Quality Management	1
QARS 421 Applied Quality and Regulatory Practices	1
QARS 425 Quality Assurance Project Management	1
QARS 450 Medical Device Regulations or QARS 460 Drug and Biologics Regulations	1
Cross-track course	1
(Any course in a track outside the student's home track)	
Total required units	11

Clinical Research	Units
Courses	
CLIN RES 400 Essentials of Initiating Clinical Research	1
CLIN RES 401 Responsible Conduct of Research	1
CLIN RES 403 Clinical Research Design and Methodology	1
and any one of the following:	
QARS 450 Medical Device Regulations	1
QARS 460 Drug and Biologics Regulations	1
Total required units:	4

Healthcare Compliance	Units
Courses	
HC_COM 410 Healthcare Regulatory Environment	1
HC_COM 411 Healthcare Compliance Programs	1
HC_COM 412 Healthcare Regulatory Enforcement	1
HC_COM 413 Healthcare Billing Models and Systems	1
Total required units:	4

Quality Systems	Units
Courses	
QARS 420 Practical Quality Management	1
QARS 421 Applied Quality and Regulatory Practices	1
QARS 425 Quality Assurance Project Management	1
and any one of the following:	
QARS 450 Medical Device Regulations	1
QARS 460 Drug and Biologics Regulations	1
Total required units:	4



## Sports Administration Master of Arts Degree Requirements

Courses	Units
Core and required courses	8
MSA 401 Sports Research Methods & Quantitative Analysis <sup>1</sup>	0-1
(not required for the Sports Analytics Concentration)	0-1
MSA 402 Fundamentals of Sports Marketing	1
MSA 403 Management and Organization of Sports	1
MSA 404 Sports Business: Finance, Accounting and Economics	1
MSA 405 Legal & Ethical Issues in Sports Management	1
MSA 406 Sports Public Relations and Crisis Management	1
LEADERS 481 Foundations of Leadership	1
One of the following:	
MSA 590 Thesis Research (see the SPS Graduate Handbook for guidelines) -or-	1
MSA 498 Capstone Class	
Electives Courses	3
(choose any three MSA electives)	3
Sports Analytics Concentration <sup>2</sup>	
PREDICT 400-DL Math for Modelers	
PREDICT 401-DL Introduction to Statistical Analysis	4
PREDICT 456-DL Sports Performance Analytics	
PREDICT 457-DL Sports Management Analytics	
Total required units	11

<sup>&</sup>lt;sup>1</sup> Students enrolled in the Sports Analytics Concentration are required to take Predict 401-DL Introduction to Statistical Analysis in lieu of MSA 401 Sports Research Methods & Quantitative Analysis.

<sup>&</sup>lt;sup>2</sup> Students enrolled in the Sports Analytics Concentration are required to take the four course PREDICT sequence to fulfill both core and concentration requirements. MSA electives do not qualify for this concentration.