

SPS Graduate Program Curricula
2013-14

The following program requirements apply to SPS graduate students that begin their program in the 2013-14 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.

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

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Information Systems – On Campus or Distance Learning (Blended)

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/Required courses	5 (4 for ABI)
CIS 413 Telecommunications and Computer Networks ¹ <i>(not required for the Analytics and Business Intelligence specialization)</i>	1
CIS 414 Object-Oriented Programming ²	1
CIS 417 Database Systems Design and Implementation ³	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)	
<i>Analytics and Business Intelligence</i> CIS 494 Project Management Concepts ⁴ CIS 435 Practical Data Science Using Machine Learning ⁵ CIS 436 Big Data Management and Analytics PREDICT 401 Introduction to Statistical Analysis ⁶ PREDICT 410 Regression and Multivariate Analysis ^{7 8} PREDICT 452 Web and Network Data Science ^{9 10} PREDICT 453 Text Analytics ¹¹	7
<i>Database and Internet Technologies</i> CIS 494 Project Management Concepts ¹² CIS 419 Web Application Development	6

¹ Formerly CIS 313 Telecommunication and Computer Networks

² Formerly CIS 314 Object-Oriented Programming

³ Formerly CIS 317 Database Systems Design and Implementation

⁴ Formerly CIS 394 Software Project Management and Development

⁵ Formerly CIS 435 Data Warehousing and Data Mining

⁶ Students who started the MSIS program prior to fall 2104 are not required to take PREDICT 400, but should ensure that they have the necessary background to succeed in PREDICT 401.

⁷ Formerly PREDICT 410 Predictive Modeling I

⁸ Students who started the MSIS program prior to fall 2014 have the option to take PREDICT 410 or an MSIS elective

⁹ Formerly PREDICT 452 Web Analytics

¹⁰ Students who started the MSIS program prior to fall 2014 have the option to take PREDICT 452 or an MSIS elective

¹¹ Students who started the MSIS program prior to fall 2014 have the option to take PREDICT 453 or an MSIS elective

¹² Formerly CIS 394 Software Project Management and Development

CIS 431 Database Administration CIS 435 Practical Data Science Using Machine Learning ¹ <i>Plus</i> any two other electives from the MSIS curriculum	
<i>Information Systems Security</i> CIS 494 Project Management Concepts ¹ CIS 452 Fundamentals of Network Security CIS 455 Business Continuity and Disaster Recovery CIS 457 Management of Information Security <i>Plus</i> any two other electives from the MSIS curriculum	6
<i>Project Management</i> CIS 494 Project Management Concepts ¹ CIS 495 IT Project Management CIS 496 Information Technology Finance and Communication <i>Plus</i> any three other electives from the MSIS curriculum	6
<i>Information Systems Management</i> CIS 494 Project Management Concepts ¹ CIS 457 Management of Information Security CIS 460 Information Technology Management CIS 465 Information Technology Strategy <i>Plus</i> any two other electives from the MSIS curriculum	6
<i>Medical Informatics (online only)</i> 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 MED_INF 406 or MHI 406 Decision Support Systems and Health Care <i>Plus</i> Any two elective courses from the MSIS curriculum	6
<i>Information Systems</i> CIS 494 Project Management Concepts ¹ <i>Plus</i> any five elective courses from the MSIS curriculum	6
<i>Total required units</i>	11

¹ Formerly CIS 435 Data Warehousing and Data Mining

Certificate of Advanced Graduate Study Requirements

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

Analytics and Business Intelligence for IT Professionals	Units
Courses	
PREDICT 401 Introduction to Statistical Analysis	1
PREDICT 410 Regression and Multivariate Analysis ¹²	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 (formerly CIS 313)	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

¹ Formerly PREDICT 410 Predictive Modeling I

² May take PREDICT 400 Math for Modelers in place of PREDICT 410 Regression and Multivariate Analysis

**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. ¹	2
Three graduate-level course electives. May not include more than 2 MCW 499 Independent Study courses. ¹	3
MCW 590 Capstone ² <i>(see the SPS Graduate Handbook for guidelines)</i>	1
<i>Total required units</i>	10

¹ 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.

² Now MCW 590 Capstone Writing and Revision.

**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. ¹	3
Three graduate-level course electives. May not include more than 2 independent study courses. ²	3
MCW 589 Capstone Research ³ <i>(see the SPS Graduate Handbook for guidelines)</i>	1
MCW 590 Capstone ⁴ <i>(see the SPS Graduate Handbook for guidelines)</i>	1
<i>Total required units</i>	18

¹ 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.

² 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.

³ Now MCW 589 Capstone Preparation and Writing

⁴ Now MCW 590 Capstone Writing and Revision

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
Two of the following seminars:	2
IPLS 401 Seminar in Liberal Studies I	
IPLS 402 Seminar in Liberal Studies II	
IPLS 403 Seminar in Liberal Studies III	
Five 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	5
IPLS 590 Thesis Research (see the SPS Graduate Handbook for guidelines)	1
<i>Total required units</i>	9

Certificate of Advanced Graduate Study Requirements

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

Courses	Units
American Studies, Chicago Studies, History, Religious and Ethical Studies, Interdisciplinary Studies	
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
<i>Total required units:</i>	4

¹ 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. ¹ 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
<i>Total required units</i>	9

Certificate of Advanced Graduate Study Requirements

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

Courses	Units
American Literature, British Literature, Comparative and World Literature, Film, Literature and Visual Culture, Interdisciplinary Studies	
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
<i>Total required units:</i>	4

¹ 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**

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

Courses	Units
Track courses (determined upon admission)	0-4
<i>Clinical Track</i>	
CIS 413 Telecommunications and Computer Networks ¹	1
CIS 417 Database Systems Design and Implementation ²	1
<i>Technologist Track</i>	
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 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
LEADERS 481 Foundations of Leadership	1
<i>One of the following:</i>	
MED INF or MHI 498 Capstone Project – or -	1
MED INF or MHI 590 Thesis Research (see the SPS Graduate Handbook for guidelines)	
<i>Total required units</i>	11³-13

¹ Formerly CIS 313 Telecommunication and Computer Networks

² Formerly CIS 317 Database Systems Design and Implementation

³ 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.

Certificate of Advanced Graduate Study Requirements

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

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 or MHI 404 Health Care Enterprise 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 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:	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 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
<i>Total required units:</i>	4

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

Courses	Units
Core courses (7)	
PREDICT 401-DL: Introduction to Statistical Analysis	1
PREDICT 402-DL: Introduction to Predictive Analytics & Data Collection ¹	1
CIS 317-DL: Database Systems Design and Implementation ²	1
CIS 435-DL: Data Warehousing & Data Mining ³	1
PREDICT 410-DL: Predictive Modeling I ⁴	1
PREDICT 411-DL: Predictive Modeling II ⁵	1
PREDICT 475-DL: Project Management	1
Elective courses (choose any two PREDICT electives, including 490 special topics and select CIS courses)	2
Other Required Courses (2)	
LEADERS 481-DL: Foundations of Leadership ⁶ – and -	1
<i>One</i> of the following:	1
PREDICT 590-DL: Thesis (see the SPS Graduate Handbook for guidelines) - or -	
PREDICT 498-DL: Capstone Project	
Total required units:	11

Certificate of Advanced Graduate Study Requirements

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

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

¹ Now titled PREDICT 402 Introduction to Predictive Analytics. Both versions of these courses are considered equivalent.

² As of fall 2014, students take CIS 417 Database Systems Design and Implementation or PREDICT 420 Database Systems and Data Preparation.

³ As of fall 2014, students take CIS 435 Practical Data Science Using Machine Learning or PREDICT 422 Practical Machine Learning.

⁴ Now titled PREDICT 410 Regression and Multivariate Analysis. Both versions of these courses are considered equivalent.

⁵ Now titled PREDICT 411 Generalized Linear Models. Both versions of these courses are considered equivalent.

⁶ As of fall 2014, students take LEADERS 481 Foundations of Leadership or PREDICT 480 Business Leadership and Communications.

**Public Policy and Administration – On Campus and Distance Learning
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
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 Organizational Theory ¹	1
MPPA 409 Strategies for Effective Writing and Communication	1
LEADERS 481 Foundations of Leadership	1
<i>One of the following:</i>	
MPPA 498 Capstone Project – or -	1
MPPA 590 Thesis Research (see the SPS Graduate Handbook for guidelines)	
Specialization courses (choose two electives in one of these specialization areas, or the “generalist” category to take electives not in the same track)	2
<i>Public Policy</i>	
<i>Public Administration</i>	
<i>Global Policy</i>	
<i>Health Services Policy (available to on-campus students only)</i>	
Total required units	13

¹ Students who take the newly titled 408 Public Organization Theory & Management class (fall 2015 or later) do not have to take LEADERS 481. A specialization class may be substituted.

Certificate of Advanced Graduate Study Requirements

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

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

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	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	1
Concentration area courses (choose one specialization of 4 courses)	4
<i>Healthcare Compliance Track</i>	
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
<i>Clinical Research Track</i>	
CLIN RES 400 Essentials of Initiating Clinical Research	1
CLIN RES 401 Responsible Conduct of Research	1
CLIN RES 402 Drug and Device Development or QARS 450 Medical Device Regulations or QARS 460 Drug and Biologics Regulations	1
CLIN RES 403 Clinical Research Design and Methodology	1
<i>Quality Systems Track</i>	
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 (Any course in a track outside the student's home track)	1
<i>Total required units</i>	11

Certificate of Advanced Graduate Study Requirements

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

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:	
CLIN RES 402 Drug and Device Development	1
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	9
MSA 400 Sports in the Social Context	1
MSA 401 Sports Research Methods & Quantitative Analysis	1
MSA 402 Fundamentals of Sports Marketing	1
MSA 403 Management and Organization of Sports	1
MSA 404 Principles of Sports Finance & Accounting ¹	1
MSA 405 Legal & Ethical Issues in Sports Management	1
MSA 406 Sports Risk and Crisis Management ²	1
LEADERS 481 Foundations of Leadership	1
<i>One of the following:</i>	
MSA 590 Thesis Research (see the SPS Graduate Handbook for guidelines) <i>-or-</i>	1
MSA 498 Capstone Class	
Concentration area courses ³ (choose two electives in one of these areas of concentration)	2
<i>Sports Management</i>	1
<i>Sports Marketing & Public Relations</i>	1
<i>Total required units</i>	11

¹ As of Fall 2014, MSA 404 is titled ‘Sports Business: Finance, Accounting and Economics’

² As of Fall 2014, MSA 406 is titled ‘Sports Public Relations and Crisis Management’

³ Students admitted prior to Fall 2014 should petition to take any available electives to meet their specific program track requirements