INFORMATION SYSTEMS, BS

Curriculum

The Bachelor of Science in Information Systems degree requires 45 units total, including the major, concentration, elective certificate, writing and foundational disciplines requirements, and elective courses.

Students complete eight core courses in Information Systems and choose a major concentration in Programming, Data Science, or Artificial Intelligence. Information Systems students also select an elective certificate comprised of four courses from outside of the major.

Core and Major Concentrations

Course	Title
Core Courses	
CIS 110-DL	Introduction to Programming
CIS 130-DL	Tools and Technology of the Web
CIS 313-DL	Telecommunications and Computer Networks
ORG_BEH 368-DL	Project Management
CIS 317-DL	Database Systems Design and Implementation
CIS 345-DL	Information Security
CIS 370-DL	System Analysis and Design
CIS 395-DL	Information Systems Capstone
Major Concentrations (choose one)	
Programming	
CIS 212-DL	Introduction to Object-Oriented Programming
CIS 323-DL	Python for Data Science
CIS 324-DL	Applied Data Science
CIS 385-DL	Programming for the Web
Data Science	
CIS 323-DL	Python for Data Science
CIS 324-DL	Applied Data Science
CIS 325-DL	Enterprise Data Science
CIS 326-DL	Data Engineering
Artificial Intelligence	
CIS 323-DL	Python for Data Science
CIS 324-DL	Applied Data Science
CIS 360-DL	AI with Deep Learning
CIS 361-DL	Natural Language Processing AI

Elective Certificates

Elective certificates provide students with the opportunity to build skills in a wide range of areas to meet career objectives and earn a stand-alone credential to demonstrate expertise in the professional arena.

Elective Certificates - choose one

Biology for Health Sciences (https://catalogs.northwestern.edu/sps/certificates/post-baccalaureate/biology-health-sciences/biology-health-sciences-certificate/)

Business Essentials (https://catalogs.northwestern.edu/sps/certificates/post-baccalaureate/business-essentials/business-essentials-certificate/)

Corporate Communication and Branding (https://catalogs.northwestern.edu/sps/certificates/post-baccalaureate/corporate-communication/corporate-communication-certificate/)

Health, Science, and Society (https://catalogs.northwestern.edu/sps/certificates/post-baccalaureate/health-science-society/health-science-society-certificate/)

Human Resources (https://catalogs.northwestern.edu/sps/certificates/post-baccalaureate/human-resources/human-resources-certificate/)

Law and Policy (https://catalogs.northwestern.edu/sps/certificates/post-baccalaureate/law-policy/law-policy-certificate/)

Leadership (https://catalogs.northwestern.edu/sps/certificates/post-baccalaureate/leadership/leadership-certificate/)

Public Health (https://catalogs.northwestern.edu/sps/certificates/post-baccalaureate/public-health/public-health-certificate/)

Social Justice (https://catalogs.northwestern.edu/sps/certificates/post-baccalaureate/social-justice/social-justice-certificate/)

Strategic Communication (https://catalogs.northwestern.edu/sps/certificates/post-baccalaureate/strategic-communication/strategic-communication-certificate/)

Strategic Management (https://catalogs.northwestern.edu/sps/certificates/post-baccalaureate/strategic-organizational-management/strategic-management-certificate/)

Degree Requirements

The Bachelor of Science (BS) degree is conferred by the School of Professional Studies. To earn the Bachelor of Science degree, students must complete a total of 45 units*, including a writing requirement, a foundational disciplines requirement, the major core, concentration, and elective certificate requirements, and electives. Minors are not available for the Bachelor of Science degrees.

*Each course carries 1 unit of credit unless otherwise noted in academic catalog.

Courses	Units Earned
Writing Requirement: English 111 and 205	2
Humanities	4
Scientific Inquiry and Quantitative Reasoning	4
Social Sciences	4
Major Requirements	8
Major Concentration	4
Elective Certificate	4
Electives	15
Total	**45**

About the Writing Requirement

The writing requirement ensures that students have the skills necessary to meet the rigorous writing demands of subsequent SPS courses in all majors, degrees, and disciplines. Expository writing courses — ENGLISH 111 Writing Seminar II and ENGLISH 205 Intermediate Composition — provide the tools to meet the demands of advanced academic writing. Completion of ENGLISH 111 Writing Seminar II and ENGLISH 205 Intermediate Composition with a grade of C or higher satisfies the writing requirement in all SPS bachelor's degree programs.

Writing requirement courses may not be audited or taken on a pass/no credit basis. Performance-Based Admission students are required

to complete ENGLISH 111 and ENGLISH 205 as two of their first four courses.

Writing Requirement Appeals

Students who have been admitted into the degree program as transfer admits may appeal the writing requirement. The writing requirement appeal is reserved for students who can demonstrate the necessary skills for writing university-level research and analytical papers by submitting previous college research papers written within the last three to five years. The papers submitted for the appeal will be evaluated for standards of good expository writing, including: a fully developed thesis; sound logic and adequate evidence in support of the thesis; effective organization, coherent structure, and an overall unity; correct grammar, punctuation, and spelling. A successful appeal does not result in credit for the writing requirement courses; the requirement for ENGLISH 111 and 205 is waived. Students must complete other courses in place of the writing requirement that meet the curriculum requirements of their program. Performance-Based Admission students may not appeal the writing requirement. To appeal the writing requirement, see instructions in the Undergraduate Academic Policies and Procedures (https://catalogs.northwestern.edu/sps/undergraduate-academic-policies-procedures/).

About the Foundational Disciplines Requirement

Students complete coursework in three foundational disciplines—humanities, scientific inquiry and quantitative reasoning, and social sciences—to obtain broad experience in the liberal arts. Included in the foundational disciplines requirement are two courses that apply perspectives on power, justice, and equity: one course focused within the United States and one course focused globally. A philosophy course on professional ethics is required for one of the four humanities courses.

Students in Bachelor of Science degrees select from online courses in the humanities, scientific inquiry and quantitative reasoning, and social sciences areas that satisfy the foundational disciplines requirement, including the two U.S. and global perspectives courses and one business ethics philosophy course (PHIL 264 or PHIL 364).