INFORMATION SYSTEMS, BS

Curriculum

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

Students take 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

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

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 (available Fall 2025)

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

Corporate Communication and Branding (available Fall 2023)

Health, Science, and Society (available Fall 2024)

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

Degree Requirements

In addition to the core courses, major concentration, elective certificate, and elective courses, the B.S. degree requires 14 units of distribution courses that includes a writing requirement and courses from three areas: humanities, science and math, and social sciences. Two distribution courses focus on diversity and inclusion, one course within the United States and one course within global perspectives. Students complete a philosophy course on professional ethics for one of the four humanities distribution courses.

<table>
<thead>
<tr>
<th>Courses</th>
<th>Units Earned</th>
</tr>
</thead>
<tbody>
<tr>
<td>Writing Requirement: English 111 and 205</td>
<td>2</td>
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<tr>
<td>Humanities</td>
<td>4</td>
</tr>
<tr>
<td>Scientific Inquiry and Quantitative Reasoning</td>
<td>4</td>
</tr>
<tr>
<td>Social Sciences</td>
<td>4</td>
</tr>
<tr>
<td>Major Requirements</td>
<td>8</td>
</tr>
<tr>
<td>Major Concentration</td>
<td>4</td>
</tr>
<tr>
<td>Elective Certificate</td>
<td>4</td>
</tr>
<tr>
<td>Electives</td>
<td>15</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>45</td>
</tr>
</tbody>
</table>

Law and Policy (available Fall 2024)

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

Public Health (available Fall 2025)

Social Justice (available Fall 2024)

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

Strategic Management