INFORMATION SYSTEMS, B.S.

Begin Campus: Any Penn State Campus
End Campus: Harrisburg

Program Description
This major prepares students to enter rapidly expanding fields associated with technology. This includes programming, systems analysis and design, database administration, network management, support services and training, and management of information resources. Students obtain competence both in information technology and in business theory. Thus, the curriculum combines technical content with managerial aspects of information systems. Each student’s background is complemented with basic business instruction in accounting, marketing, management, supply chain management, and finance. With business and non-business electives, the program is designed to develop necessary skills and competencies required to be an effective Information Systems professional.

Because the Harrisburg area is the center of industry and economic development for South Central Pennsylvania, students are provided with many opportunities to experience the exciting and challenging world of business through guest speakers, experiential learning, internships, and career placement.

What is Information Systems?
Information systems is the application of business intelligence, and design and development to resolve problems. The program is designed to help create the next generation of IS professionals who become experts in developing, applying, modifying, and strategizing technology to support IT-enabled change in organizations and achieve strategic objectives. This degree will prepare students to work with other business professionals to create platforms that integrate digital technologies to improve business processes and managerial decision making.

You Might Like This Program If...
• Your career interests intersect at business and technology.
• You are passionate about creating high-tech solutions to organizational and societal challenges.
• You are interested in application development and programming.
• You are curious about using business analytic methods to support business operations and management decision making.
• You are interested in leveraging current and emerging technologies to improve business processes and facilitate business transformation.

Entrance to Major
Entry to the Information Systems major requires the completion of 8 entry-to-major courses: ACCTG 211, ECON 102, ENGL 15 or ENGL 30H, FIN 301, MATH 110 or MATH 140, MGMT 301, MKTG 301, SCM 200 or STAT 200; and a 2.00 or higher cumulative grade-point average.

Additional information about this major is available in the office of the Director of Undergraduate Studies, School of Business Administration at Penn State Harrisburg.

Degree Requirements
For the Bachelor of Science degree in Information Systems, a minimum of 120 credits is required:

<table>
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<tr>
<th>Requirement</th>
<th>Credits</th>
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<tbody>
<tr>
<td>General Education</td>
<td>45</td>
</tr>
<tr>
<td>Electives</td>
<td>8</td>
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<tr>
<td>Requirements for the Major</td>
<td>79</td>
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</tbody>
</table>

12 of the 45 credits for General Education are included in the Requirements for the Major. This includes: 3 credits of GWS courses; 3 credits of GS courses; 6 credits of GQ courses.

Consistent with Senate policy, at least 24 credits of course work in the major and the capstone course must be completed at the Capital College to earn the degree.

Requirements for the Major
To graduate, a student enrolled in the major must earn a grade of C or better in each course designated by the major as a C-required course, as specified by Senate Policy 82-44 (http://senate.psu.edu/policies-and-rules-for-undergraduate-students/82-00-and-83-00-degree-requirements/#82-44).

Code | Title                                      | Credits |
-----|--------------------------------------------|---------|
**Prescribed Courses** | | |
ACCTG 211 | Financial and Managerial Accounting for Decision Making | 4 |
BA 364Y | International Business and Society | 3 |
BA 462 | Business Strategy | 3 |
ECON 102 | Introductory Microeconomic Analysis and Policy | 3 |
ECON 104 | Introductory Macroeconomic Analysis and Policy | 3 |
ENGL 202D | Effective Writing: Business Writing | 3 |
FIN 301 | Corporation Finance | 3 |
MGMT 301 | Basic Management Concepts | 3 |
MIS 204 | Introduction to Management Information Systems | 3 |
MKTG 301 | Principles of Marketing | 3 |
SCM 301 | Supply Chain Management | 3 |
MIS 307 | Algorithmic Concepts | 3 |
MIS 390 | Information Systems Management and Applications | 3 |
MIS 448 | Business Telecommunications | 3 |
MIS 450 | System Design Project | 3 |
MIS 465 | DataBase Management | 3 |
**Prescribed Courses: Require a grade of C or better** | | |
**Additional Courses** | | |
BA 241 | Legal Environment of Business | 4 |
& BA 242 | Social and Ethical Environment of Business | 4 |
or BA 243 | Social, Legal, and Ethical Environment of Business | 4 |
MATH 110 | Techniques of Calculus I | 4 |
or MATH 140 | Calculus With Analytic Geometry I | 4 |
SCM 200 | Introduction to Statistics for Business | 4 |
or STAT 200 | Elementary Statistics | 4 |
Select one of the following: | | 3 |
CMPSC 101 | Introduction to Programming | 3 |
CMPSC 121 | Introduction to Programming Techniques | 3 |
Knowledge Domains
• Quantification (GQ): 6 credits
• Writing and Speaking (GWS): 9 credits

Additional Courses: Require a grade of C or better
Select 9 credits from one of the following three areas of concentration A, B, or C:

A. Application Development Concentration
IST 302 IT Project Management
MIS 413 Interface design for Information Systems Applications
MIS 466 Business Programming for the WEB
MIS 489 Seminar in Information Systems

B. Network Security Concentration
IST 302 IT Project Management
IST 451 Network Security
IST 456 Information Security Management
MIS 489 Seminar in Information Systems

C. Individualized Concentration
IST 302 IT Project Management
IST 451 Network Security
IST 456 Information Security Management
MIS 413 Interface design for Information Systems Applications
MIS 446 Information Technology and Business Strategy
MIS 461 Web Technologies
MIS 466 Business Programming for the WEB
MIS 489 Seminar in Information Systems

Supporting Courses and Related Areas
Select 6 credits from 200-400 level business courses from: ACCTG, BA, ECON, FIN, MGMT, MIS, MKTG, or SCM in consultation with an academic adviser and in support of the student's interests

General Education
Connecting career and curiosity, the General Education curriculum provides the opportunity for students to acquire transferable skills necessary to be successful in the future and to thrive while living in interconnected contexts. General Education aids students in developing intellectual curiosity, a strengthened ability to think, and a deeper sense of aesthetic appreciation. These are requirements for all baccalaureate students and are often partially incorporated into the requirements of a program. For additional information, see the General Education Requirements (https://bulletins.psu.edu/undergraduate/general-education/baccalaureate-degree-general-education-program/) section of the Bulletin and consult your academic adviser.

The keystone symbol appears next to the title of any course that is designated as a General Education course. Program requirements may also satisfy General Education requirements and vary for each program.

Integrative Studies (may also complete a Knowledge Domain requirement)
• Inter-Domain or Approved Linked Courses: 6 credits

University Degree Requirements
First Year Engagement
All students enrolled in a college or the Division of Undergraduate Studies at University Park, and the World Campus are required to take 1 to 3 credits of the First-Year Seminar, as specified by their college First-Year Engagement Plan.

First-year baccalaureate students entering Penn State should consult their academic adviser for these requirements.

Cultures Requirement
6 credits are required and may satisfy other requirements
• United States Cultures: 3 credits
• International Cultures: 3 credits

Writing Across the Curriculum
3 credits required from the college of graduation and likely prescribed as part of major requirements.

Total Minimum Credits
A minimum of 120 degree credits must be earned for a baccalaureate degree. The requirements for some programs may exceed 120 credits. Students should consult with their college or department adviser for information on specific credit requirements.

Quality of Work
Candidates must complete the degree requirements for their major and earn at least a 2.00 grade-point average for all courses completed within their degree program.

Limitations on Source and Time for Credit Acquisition
The college dean or campus chancellor and program faculty may require up to 24 credits of course work in the major to be taken at the location or in the college or program where the degree is earned. Credit used toward degree programs may need to be earned from a particular source or within time constraints (see Senate Policy 83-80 (http://senate.psu.edu/policies-and-rules-for-undergraduate-students/82-00-and-83-00-degree-requirements/#83-80)). For more information, check the Suggested Academic Plan for your intended program.

Integrated B.S. in Information Systems and M.S. in Information Systems
Requirements for the Integrated B.S. in Information Systems and M.S. in Information Systems can be found in the Graduate Bulletin (https://bulletins.psu.edu/graduate/programs/majors/information-systems/#integratedundergradgradprogramstext).
Integrated B.S. in Information Systems and M.B.A. in Business Administration

Requirements for the Integrated B.S. in Information Systems and M.B.A. in Business Administration can be found in the Graduate Bulletin (https://bulletins.psu.edu/graduate/programs/majors/business-administration-capital/#integratedundergradgradprogramstext).

Learning Outcomes
Student graduates of our baccalaureate degree programs should be:

1. Effective communicators.
   a. Present verbally, thoughts and ideas in a way that can be clearly understood by a target audience.
   b. Convey ideas in a clear, coherent manner in written communication.
2. Ethical and socially responsible.
   a. Be competent in analyzing social and ethical decision making issues in organizations.
3. Critical thinkers.
   a. Be able to think and identify multiple dimensions of company issues and performances and make an assessment of company performances in achieving financial and strategic objectives, tracking their achievements, and giving management of companies a more complete and balanced view of how the organization is performing.
   a. Demonstrate knowledge in technologies that support the information environment.
   b. Demonstrate knowledge in business/organizational procedures that are supported by technology.
   c. Demonstrate general skills and abilities that promote good communication, problem-solving and analytical abilities as well as the ability to work in a collaborative environment.
   d. Demonstrate skills to participate in and lead multidisciplinary teams in the development, implementation and management of information technology solutions.

Academic Advising
The objectives of the university’s academic advising program are to help advisees identify and achieve their academic goals, to promote their intellectual discovery, and to encourage students to take advantage of both in-and out-of class educational opportunities in order that they become self-directed learners and decision makers.

Both advisers and advisees share responsibility for making the advising relationship succeed. By encouraging their advisees to become engaged in their education, to meet their educational goals, and to develop the habit of learning, advisers assume a significant educational role. The advisee’s unit of enrollment will provide each advisee with a primary academic adviser, the information needed to plan the chosen program of study, and referrals to other specialized resources.

READ SENATE POLICY 32-00: ADVISING POLICY (https://senate.psu.edu/policies-and-rules-for-undergraduate-students/32-00-advising-policy/)

Harrisburg
Roderick L. Lee, Ph.D.
Program Coordinator
E-355 Olmsted Building

Suggested Academic Plan
The suggested academic plan(s) listed on this page are the plan(s) that are in effect during the 2022-23 academic year. To access previous years’ suggested academic plans, please visit the archive (https://bulletins.psu.edu/undergraduate/archive/) to view the appropriate Undergraduate Bulletin edition (Note: the archive only contains suggested academic plans beginning with the 2018-19 edition of the Undergraduate Bulletin).

Information Systems, B.S. at Harrisburg Campus
The course series listed below provides only one of the many possible ways to move through this curriculum. The University may make changes in policies, procedures, educational offerings, and requirements at any time. This plan should be used in conjunction with your degree audit (accessible in LionPATH as either an Academic Requirements or What If report). Please consult with a Penn State academic adviser on a regular basis to develop and refine an academic plan that is appropriate for you.

First Year

<table>
<thead>
<tr>
<th>Fall</th>
<th>Credits</th>
<th>Spring</th>
<th>Credits</th>
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<tbody>
<tr>
<td>ENGL 15 or 30H</td>
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<td>CAS 100</td>
<td>3</td>
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<tr>
<td>MATH 110 or 140</td>
<td>4</td>
<td>STAT 200 or SCM 200</td>
<td>4</td>
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<tr>
<td>ECON 102</td>
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<td>MGMT 301</td>
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<td><strong>14.5</strong></td>
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Second Year

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<tbody>
<tr>
<td>ACCTG 211</td>
<td>4</td>
<td>FIN 301</td>
<td>3</td>
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<tr>
<td>MKTG 301</td>
<td>3</td>
<td>IST 140, CMPSC 101, or CMPSC 121</td>
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<tr>
<td>MIS 204</td>
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<td>ENGL 202D</td>
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<td>General Education Course</td>
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<td>General Education Course</td>
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<td>General Education Course</td>
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<td>MIS 390</td>
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Third Year

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<th>Fall</th>
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<td>BA 241</td>
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<td>SCM 301</td>
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<tr>
<td>BA 242</td>
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<td>Application Development Concentration or Network Security Concentration or Individualized Concentration</td>
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<td>ECON 104</td>
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<td>MIS 448</td>
<td>3</td>
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<td>MIS 307</td>
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<td>General Education Course</td>
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<td>MIS 465</td>
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Fourth Year

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<th>Fall</th>
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<tr>
<td>BA 364Y</td>
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<td>BA 462</td>
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777 West Harrisburg Pike
Middletown, PA 17057
717-948-6641
rlee@psu.edu
<table>
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<tr>
<th>Application Development</th>
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<tbody>
<tr>
<td>Concentration or Network</td>
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<td>Security Concentration</td>
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<td>or Individualized</td>
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<tr>
<td>Concentration*</td>
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<tr>
<td>Total Credits 120</td>
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</table>

* Course requires a grade of C or better for the major
† Course requires a grade of C or better for General Education
# Course is an Entrance to Major requirement
‡ Course satisfies General Education and degree requirement

1 Application Development Concentration
   IST 302 - It Project Management, MIS 413 - Interface Design for Information Systems Apps., MIS 466 - Business Programming for the Web

2 Network Security Concentration

3 Individualized Concentration

**University Requirements and General Education Notes:**

US and IL are abbreviations used to designate courses that satisfy University Requirements (United States and International Cultures).

W, M, X, and Y are the suffixes at the end of a course number used to designate courses that satisfy University Writing Across the Curriculum requirement.

GWS, GQ, GHW, GN, GA, GH, and GS are abbreviations used to identify General Education program courses. General Education includes Foundations (GWS and GQ) and Knowledge Domains (GHW, GN, GA, GH, GS, and Integrative Studies). Foundations courses (GWS and GQ) require a grade of 'C' or better.

Integrative Studies courses are required for the General Education program. N is the suffix at the end of a course number used to designate an Inter-Domain course and Z is the suffix at the end of a course number used to designate a Linked course.

**Advising Notes**

- 30 Credits of GA, GH, GHW, GN, GS to include 6 Integrative Studies credits.
- 15 Credits of GWS, and GQ require a grade of "C" or better.

**Career Paths**

The B.S. in Information Systems prepares students to meet the rising demand for well-educated IS professionals in business, education, healthcare, and government. Salaries for IS graduates are higher than typical business majors and even higher for those who complete an internship.

**Careers**

There is an ongoing shortage of people who have both the IT skills and the business acumen to create a competitive advantage in the global marketplace. A recent report from the 2019 Association of Information Systems IS Job Index indicates that the IS job market is flourishing. This same report shows the national placement rate is 70%. The most popular jobs are in application development, consulting, business analytics, systems analyst, and computer support.

Employers of recent IS graduates include Capital Blue Cross, CGI Federal, Deloitte, Ernst and Young, Highmark Health, RPI Consultants, Lockheed Martin, Select Medical, Shell, and Universal Health Services.

MORE INFORMATION ABOUT POTENTIAL CAREER OPTIONS FOR GRADUATES OF THE INFORMATION SYSTEMS PROGRAM (https://isjobindex.com/)

**Opportunities for Graduate Studies**

Penn State Harrisburg’s MS in Information Systems is STEM-designated degree program designed to meet the increasing need for technically grounded, upper-level information resources managers within business organizations. A limited number of academically superior B.S. in Information Systems candidates are provided the opportunity to enroll in an integrated, continuous program of study leading to both the Bachelor of Science in Information Systems and the Master of Science in Information Systems in five years.

MORE INFORMATION ABOUT OPPORTUNITIES FOR GRADUATE STUDIES (https://harrisburg.psu.edu/business-administration/information-systems/master-science-information-systems/)

**Professional Resources**

- Beta Gamma Sigma (https://www.betagammasigma.org)
- Upsilon Pi Epsilon (https://upe.acm.org/)
- Women in Information Technology (https://psuharrisburg.campuslabs.com/engage/organization/wit-psh/)
- Association for Computing Machinery’s Council on Women in Computing (ACM-W) (https://women.acm.org/)

**Accreditation**

The B.S. in Information Systems offered by the School of Business Administration at Penn State Harrisburg, the Capital College, is accredited by AACSB International – The Association to Advance Collegiate Schools of Business. Synonymous with the highest standards of excellence since 1916, AACSB provides quality assurance, business education intelligence, and professional development services to over 1,600 member organizations and more than 800 accredited business schools.
worldwide. In addition, AACSB International (AACSB) connects educators, students, and business to achieve a common goal: to create the next generation of great leaders.

MORE INFORMATION ABOUT AACSB INTERNATIONAL (https://www.aacsb.edu/)

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https://harrisburg.psu.edu/business-administration (https://harrisburg.psu.edu/business-administration/)