

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, and finance. With business and non-business electives, the program is designed to develop necessary skills to be an effective Information Systems employee. 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.

What is Information Systems?

Information systems is concerned with managing data systems and related facilities for processing and retrieving internal business information. It can include study in programming, systems analysis and design, database administration, networking, support services, and management of information resources. Additionally, it often includes study of business and management.

You Might Like This Program If...

- You are interested in organizations and how they function.
- You have strong oral and written communication skills.
- You enjoy working with computers and information technology.
- You want a career in computer programming, business analysis, or information technology.

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 30, 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:

Requirement	Credits
General Education	45
Electives	8
Requirements for the Major	79

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.

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 (<http://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.

Foundations (grade of C or better is required.)

- **Quantification (GQ):** 6 credits
- **Writing and Speaking (GWS):** 9 credits

Knowledge Domains

- **Arts (GA):** 6 credits
- **Health and Wellness (GHW):** 3 credits
- **Humanities (GH):** 6 credits
- **Social and Behavioral Sciences (GS):** 6 credits
- **Natural Sciences (GN):** 9 credits

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.

Other Penn State colleges and campuses may require the First-Year Seminar; colleges and campuses that do not require a First-Year Seminar provide students with a first-year engagement experience.

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.

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 364	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 Business Information Systems	3
MKTG 301	Principles of Marketing	3
SCM 301	Supply Chain Management	3
<i>Prescribed Courses: Require a grade of C or better</i>		
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
Additional Courses		
BA 241 & BA 242 or BA 243	Legal Environment of Business and Social and Ethical Environment of Business Social, Legal, and Ethical Environment of Business	4
MATH 110	Techniques of Calculus I	4

or MATH 140	Calculus With Analytic Geometry I	
SCM 200 or STAT 200	Introduction to Statistics for Business Elementary Statistics	4
Select one of the following:		3
CMPSC 101	Introduction to C++ Programming	
CMPSC 121	Introduction to Programming Techniques	
IST 140	Introduction to Application Development	

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: 9

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 6

Integrated B.S. in Information Systems and M.B.A. in Business Administration

The School of Business Administration offers a limited number of academically superior Bachelor of Science in Information Systems candidates 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 Business Administration. The ability to coordinate as well as concurrently pursue the two degree programs enables the students to earn both degrees in five years. Specifically, as many as twelve of the credits required for the master's degree may be applied to both undergraduate and graduate degree programs. The Integrated Undergraduate-Graduate Program reduces the total number of credits needed to earn both degrees from 150 to 138.

Students in the IUG program must satisfy the requirements for both the Bachelor of Science in Information Systems and Master of Business Administration degrees. The total course load is reduced due to courses that can count towards both degrees. The first two years of the IUG program are identical to the first two years of the Bachelor of Science

program. Students in the IUG program take five additional credits in their third year, and five fewer credits in their fourth year. The courses that count toward the Master of Business Administration degree requirements are included in the fourth year.

Student performance will be monitored on an on-going basis. In addition, a formal evaluation of student academic performance will be performed when the students have completed 100 to 105 credits, which is at the end of the first semester of the senior year for typical students in the program. Students who have not maintained a 3.0 GPA in their graduate courses will be put on probationary status with respect to the IUG program. They will receive a warning letter regarding probationary status. Their ability to continue in the IUG program will be based on their academic performance in the last semester of their senior year.

Students have the choice of receiving the B.S. in Information Systems degree at the end of the fourth year or waiting until the end of the fifth year to receive both degrees. Students who elect to receive the B.S. degree at the end of the fourth year will pay graduate tuition for courses taken in the fifth year; students opting to receive both degrees at the end of the fifth year will pay undergraduate tuition for all five years.

If for any reason students admitted to the IUG program are unable to complete the requirements for the Master of Business Administration degree, the students will be permitted to receive the Bachelor of Science in Information Systems degree assuming all the undergraduate degree requirements have been satisfactorily completed. If the students successfully complete courses listed in the recommended schedule, they will satisfy the requirements for the Bachelor of Science degree by the end of their fourth year.

Admission Requirements

To initiate the application process, students must submit a resume, a personal statement including career goals and how MBA will enhance their career goals, transcripts of courses taken outside Penn State, two letters of recommendation, with at least one from the School of Business Administration faculty, and a plan of study that integrates both undergraduate and graduate requirements. A graduate faculty adviser in collaboration with the Director of MBA Program will help undergraduate candidates determine a sequence of courses that will prepare them for acceptance into the Integrated Undergraduate-Graduate (IUG) degree program.

The number of openings in the IUG program is limited. Applicants to the IUG program must have completed a minimum of 60 credits. Typical students would apply after completing between 60 and 90 credits, that is, after the fifth semester and before the end of the seventh semester. In addition, the applicants must earn a minimum of cumulative grade point average of 3.5 and complete the following Entry to Major courses or equivalent: ACCTG 211, ECON 102, ENGL 15 or ENGL 30, FIN 301, MATH 110 or MATH 140, MGMT 301, MKTG 301 and STAT 200 or SCM 200.

To formally apply, students must submit a completed graduate school application. The students should mention in the notes section that the application is for the IUG program in Business Administration. The Graduate Management Admission Test (GMAT) or Graduate Record Examination (GRE) is not required for admission into the program; however, if students are interested in applying for a graduate assistantship, GMAT or GRE scores must be submitted by the end of the eighth semester.

Students applications will be evaluated based on their overall portfolio, in addition to the above requirements. In all cases, admission to the program will be at the discretion of the Graduate Admissions Committee in Business Administration.

Degree Requirements

Students in the IUG program must satisfy the degree requirements for both Bachelor of Science in Information Systems and Master of Business Administration degrees. The total course load is reduced due to the maximum of 12 credits that can count towards both degrees. All courses counted for both degrees must be at the 500- or 800-level.

Integrated B.S. in Information Systems/MSIS Program

The School of Business Administration offers a limited number of academically superior Bachelor of Science in Information Systems candidates 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. The ability to coordinate as well as concurrently pursue the two degree programs enables the students to earn both degrees in five years. Specifically, as many as twelve of the credits required for the master's degree may be applied to both undergraduate and graduate degree programs. The Integrated Undergraduate-Graduate Program reduces the total number of credits needed to earn both degrees from 150 to 138.

Students in the IUG program must satisfy the requirements for both the Bachelor of Science in Information Systems and Master of Science in Information Systems degrees. The total course load is reduced due to courses that can count towards both degrees. The first two years of the IUG program are identical to the first two years of the Bachelor of Science program. Students in the IUG program take five additional credits in their third year, and five fewer credits in their fourth year. The courses that count toward the Master of Science in Information Systems degree requirements are included in the fourth year.

Student performance will be monitored on an on-going basis. In addition, a formal evaluation of student academic performance will be performed when the students have completed 100 to 105 credits, which is at the end of the first semester of the senior year for typical students in the program. Students who have not maintained a 3.0 GPA in their graduate courses will be put on probationary status with respect to the IUG program. They will receive a warning letter regarding probationary status. Their ability to continue in the IUG program will be based on their academic performance in the last semester of their senior year.

Students have the choice of receiving the B.S. in Information Systems degree at the end of the fourth year or waiting until the end of the fifth year to receive both degrees. Students who elect to receive the B.S. degree at the end of the fourth year will pay graduate tuition for courses taken in the fifth year; students opting to receive both degrees at the end of the fifth year will pay undergraduate tuition for all five years.

If for any reason students admitted to the IUG program are unable to complete the requirements for the Master of Science in Information Systems degree, the students will be permitted to receive the Bachelor of Science in Information Systems degree assuming all the undergraduate degree requirements have been satisfactorily completed. If the students successfully complete courses listed in the recommended schedule, they will satisfy the requirements for the Bachelor of Science degree by the end of their fourth year.

Admission Requirements

To initiate the application process, students must submit a resume, a personal statement including career goals and how MBA will enhance their career goals, transcripts of courses taken outside Penn State, two letters of recommendation, with at least one from the School of Business Administration faculty, and a plan of study that integrates both undergraduate and graduate requirements. A graduate faculty adviser in collaboration with the Director of MSIS Program will help undergraduate candidates determine a sequence of courses that will prepare them for acceptance into the Integrated Undergraduate-Graduate (IUG) degree program.

The number of openings in the IUG program is limited. Applicants to the IUG program must have completed a minimum of 60 credits. Typical students would apply after completing between 60 and 90 credits, that is, after the fifth semester and before the end of the seventh semester. In addition, the applicants must earn a minimum of cumulative grade point average of 3.5 and complete the following Entry to Major courses or equivalent:

Code	Title	Credits
ACCTG 211	Financial and Managerial Accounting for Decision Making	4
ECON 102	Introductory Microeconomic Analysis and Policy	3
ENGL 15 or ENGL 30	Rhetoric and Composition Honors Freshman Composition	3
FIN 301	Corporation Finance	3
MATH 110 or MATH 140	Techniques of Calculus I Calculus With Analytic Geometry I	4
MGMT 301	Basic Management Concepts	3
MKTG 301	Principles of Marketing	3
SCM 200 or STAT 200	Introduction to Statistics for Business Elementary Statistics	4

To formally apply, students must submit a completed graduate school application. The students should mention in the notes section that the application is for the IUG program in Business Administration. The Graduate Management Admission Test (GMAT) or Graduate Record Examination (GRE) is not required for admission into the program; however, if students are interested in applying for a graduate assistantship, GMAT or GRE scores must be submitted by the end of the eighth semester.

Student applications will be evaluated based on their overall portfolio, in addition to the above requirements. In all cases, admission to the program will be at the discretion of the Graduate Admissions Committee in Business Administration.

Degree Requirements

Students in the IUG program must satisfy the degree requirements for both Bachelor of Science in Information Systems and Master of Science in Information Systems degrees. The total course load is reduced due to the maximum of 12 credits that can count towards both degrees. All courses counted for both degrees must be at the 500- or 800-level.

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.
4. Competent in the Information Systems Discipline.
 - 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 (<http://senate.psu.edu/policies-and-rules-for-undergraduate-students/32-00-advising-policy>)

Harrisburg

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Suggested Academic Plan

The suggested academic plan(s) listed on this page are the plan(s) that are in effect during the 2019-20 academic year. To access previous years' suggested academic plans, please visit the archive (<http://bulletins.psu.edu/undergraduate/archive>) to view the appropriate Undergraduate Bulletin edition (*Note: the archive only contain suggested*

academic plans beginning with the 2018-19 edition of the Undergraduate Bulletin).

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

Fall	Credits Spring	Credits
ENGL 15 or 30 [‡] #	3 CAS 100 [‡]	3
MATH 110 or 140 ^{#†}	4 STAT 200 or SCM 200 [#]	4
ECON 102 ^{#†}	3 MGMT 301 [#]	3
General Education Course	3 General Education Course	3
General Education Course	1.5 General Education Course	3
	14.5	16

Second Year

Fall	Credits Spring	Credits
ACCTG 211 [#]	4 FIN 301 [#]	3
MKTG 301 [#]	3 IST 140, CMPSC 101, or CMPSC 121	3
MIS 204	3 ENGL 202D [†]	3
General Education Course	3 General Education Course	3
General Education Course	3 MIS 390 [*]	3
	16	15

Third Year

Fall	Credits Spring	Credits
BA 241	2 SCM 301	3
BA 242	2 Application Development Concentration or Network Security Concentration or Individualized Concentration [*]	3
ECON 104	3 MIS 448 [*]	3
MIS 307 [*]	3 General Education Course	3
MIS 465 [*]	3 General Education Course	3
General Education Course	1.5	
	14.5	15

Fourth Year

Fall	Credits Spring	Credits
BA 364	3 BA 462	3
Application Development Concentration or Network Security Concentration or Individualized Concentration [*]	3 MIS 450 [*]	3
200-400 level Business courses in consultation with adviser	6 Application Development Concentration or Network Security Concentration or Individualized Concentration [*]	3
Non-Business Elective	3 Non-Business Elective	3

Non-Business Elective	2
	15
	14

Total Credits 120

- * 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
IST 302 - IT Project Management, IST 456 - Information Security Management, IST 451 - Network Security, or MIS 489 - Seminar in Information Systems
- 3 Individualized Concentration
IST 302 - IT Project Management, IST 451, IST 451 - Network Security, IST 456 - Information Security Management, MIS 413 - Interface Design for Information Systems Apps, MIS 446 - Information Technology and Business Strategy, MIS 461 - Web Technologies, MIS 466 - Business Programming for the Web, or MIS 489 - Seminar in Information Systems

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.
- Courses required for the major must generally be taken within 10 years of entrance to the major.
- Students must complete a 3-credit course in "United States Cultures (US)" and a 3-credit course in "International Cultures (IL)." B A 364 (US/IL) may be used to meet either the IL or US requirement, but may be used to fulfill only 3 of the 6 credit requirement.

Career Paths

Because the Harrisburg area is the center of industry and economic development for southcentral Pennsylvania, students are provided with

many opportunities to experience the exciting and challenging world of business through internships and guest speakers in various courses.

Careers

Opportunities exist in systems development in positions such as systems analyst, systems designer, programmer, and analyst programmer. Another challenging career path for IS graduates includes positions in information systems management or project management. Graduates will find these opportunities in small businesses, large corporations, government, and education.

MORE INFORMATION ABOUT POTENTIAL CAREER OPTIONS FOR GRADUATES OF THE INFORMATION SYSTEMS PROGRAM (<https://harrisburg.psu.edu/business-administration/information-systems/bachelor-science-information-systems>)

Opportunities for Graduate Studies

The Bachelor of Science in Information systems provides a sound background for students who plan to pursue graduate studies in fields associated with technology, including Penn State's Master of Science in Information Systems program.

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

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. AACSB's mission is to foster engagement, accelerate innovation, and amplify impact in business education. 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. 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>)

Contact

Harrisburg

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<http://harrisburg.psu.edu/business-administration/information-systems/bachelor-science-information-systems>