

# INFORMATION SCIENCES AND TECHNOLOGY, B.S. (INFORMATION SCIENCES AND TECHNOLOGY)

**Begin Campus:** Any Penn State Campus

**End Campus:** University Park, World Campus

## Degree Requirements

For the Bachelor of Science degree in Information Sciences and Technology, a minimum of 125 credits is required:

Requirement	Credits
General Education	45
Electives	8
Requirements for the Major	84

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

### 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 (<https://senate.psu.edu/policies-and-rules-for-undergraduate-students/82-00-and-83-00-degree-requirements/#82-44>).

### Common Requirements for the Major (All Options)

Code	Title	Credits
<b>Prescribed Courses</b>		
STAT 200	Elementary Statistics	4
<i>Prescribed Courses: Require a grade of C or better</i>		
IST 110	Information, People and Technology	3
IST 210	Organization of Data	3
IST 220	Networking and Telecommunications	3
IST 230	Language, Logic, and Discrete Mathematics	3
IST 301	Information and Organizations	3
IST 331	Foundations of Human-Centered Design	3
IST 440W	Information Sciences and Technology Integration and Problem Solving	3
IST 495	Internship	1
<b>Additional Courses</b>		
Select one of the following: 3		
ECON 14	Principles of Economics	
ECON 102	Introductory Microeconomic Analysis and Policy	
ECON 104	Introductory Macroeconomic Analysis and Policy	
<i>Additional Courses: Require a grade of C or better</i>		
ENGL 202C	Effective Writing: Technical Writing	3
or ENGL 202D	Effective Writing: Business Writing	
MATH 110	Techniques of Calculus I	4

or MATH 140		Calculus With Analytic Geometry I	
Select one of the following:			3
CMPS 101	Introduction to Programming		
CMPS 121	Introduction to Programming Techniques		
IST 140	Introduction to Application Development		

Supporting Courses and Related Areas		
Attainment of third-level proficiency in a single foreign language <sup>1</sup>		12
Select 6 credits of international courses in foreign culture from College-approved list		6

*Supporting Courses and Related Areas: Require a grade of C or better*

Select 3 credits at the 400 level in emerging issues and technologies from College-approved list		3
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### Requirements for the Option

Select an option	24
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<sup>1</sup> Proficiency must be demonstrated by either examination or course work. See the admission section of the general information in this Bulletin for the placement policy for Penn State foreign language courses.

### Requirements for the Option

#### Information Context: People, Organizations, and Society Option (24 credits)

*Available at the following campuses: University Park*

Code	Title	Credits
<b>Prescribed Courses</b>		
<i>Prescribed Courses: Require a grade of C or better</i>		
IST 431	The Information Environment	6
& IST 432	and Legal and Regulatory Environment of Information Science and Technology	

Additional Courses		
<i>Additional Courses: Require a grade of C or better</i>		
IST 240	Introduction to Computer Languages	3
or IST 242	Intermediate & Object-Oriented Application Development	
IST 302	IT Project Management	3
or IST 413	Usability Engineering	

Supporting Courses and Related Areas		
Select 12 credits from College-approved list (at least 3 credits at the 400-level and no more than 6 credits below the 200-level)		12

### Information Systems: Design & Development Option (24 credits)

*Available at the following campuses: Harrisburg, World Campus*

Code	Title	Credits
<b>Prescribed Courses</b>		
<i>Prescribed Courses: Require a grade of C or better</i>		
IST 242	Intermediate & Object-Oriented Application Development <sup>1</sup>	3
IST 311	Object-Oriented Design and Software Applications	3
<b>Additional Courses</b>		
<i>Additional Courses: Require a grade of C or better</i>		
IST 261	Application Development Design Studio I	3
or IST 361	Application Development Design Studio II	
Select 6 credits of the following:		6

IST 411	Distributed-Object Computing
IST 412	The Engineering of Complex Software Systems
IST 413	Usability Engineering

**Supporting Courses and Related Areas**

Select 9 credits from College-approved list (at least 3 credits must be at the 400-level) 9

<sup>1</sup> Students in the Information Systems: Design and Development Option are expected to take IST 242 prior to taking the prescribed and additional courses for that option.

**Information Technology: Integration & Application Option (24 credits)**

Available at the following campuses: Harrisburg, World Campus

Code	Title	Credits
<b>Prescribed Courses</b>		
<i>Prescribed Courses: Require a grade of C or better</i>		
IST 302	IT Project Management	3
IST 420	Fundamentals of Systems and Enterprise Integration	3
IST 421	Advanced Enterprise Integration: Technologies and Applications	3
<b>Additional Courses</b>		
<i>Additional Courses: Require a grade of C or better</i>		
IST 240 or IST 242	Introduction to Computer Languages Intermediate & Object-Oriented Application Development	3

**Supporting Courses and Related Areas**

Select 12 credits from College-approved list (at least 3 credits at the 400-level and no more than 6 credits below the 200-level) 12

**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.

**Foundations (grade of C or better is required and Inter-Domain courses do not meet this requirement.)**

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

**Breadth in the Knowledge Domains (Inter-Domain courses do not meet this requirement.)**

- **Arts (GA):** 3 credits
- **Health and Wellness (GHW):** 3 credits
- **Humanities (GH):** 3 credits

- **Social and Behavioral Sciences (GS):** 3 credits
- **Natural Sciences (GN):** 3 credits

**Integrative Studies**

- **Inter-Domain Courses (Inter-Domain):** 6 credits

**Exploration**

- **GN**, may be completed with Inter-Domain courses: 3 credits
- **GA, GH, GN, GS, Inter-Domain courses.** This may include 3 credits of World Language course work beyond the 12th credit level or the requirements for the student's degree program, whichever is higher: 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 (<https://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.