

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

Begin Campus: Abington, Altoona, Berks, Beaver, Brandywine, DuBois, Erie, Fayette, Greater Allegheny, Harrisburg, Hazleton, Lehigh Valley, Mont Alto, New Kensington, Shenango, Schuylkill, University Park, Wilkes-Barre, Scranton, York

End Campus: University Park

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.

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>).

Common Requirements for the Major (All Options)

| Code | Title | Credits |
|---|---|---------|
| Prescribed Courses | | |
| 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 |
| Additional Courses | | |
| <i>Additional Courses: Require a grade of C or better</i> | | |
| ENGL 202C or ENGL 202D | Effective Writing: Technical Writing Effective Writing: Business Writing | 3 |
| MATH 110 or MATH 140 | Techniques of Calculus I Calculus With Analytic Geometry I | 4 |
| Select one of the following: | | 3 |
| CMPSC 101 | Introduction to Programming | |
| CMPSC 121 | Introduction to Programming Techniques | |
| IST 140 | Introduction to Application Development | |
| 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 | |
| Supporting Courses and Related Areas | | |
| Attainment of third-level proficiency in a single foreign language ¹ | | 12 |
| Select 6 credits of international courses in foreign culture from College-approved list | | 6 |
| <i>Supporting Courses and Related Areas: Require a grade of C or better</i> | | |
| Select 3 credits at the 400 level in emerging issues and technologies from College-approved list | | 3 |
| Requirements for the Option | | |
| Select an option | | 24 |

¹ 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: Beaver, Berks, Scranton, University Park

| Code | Title | Credits |
|---|--|---------|
| Prescribed Courses | | |
| <i>Prescribed Courses: Require a grade of C or better</i> | | |
| IST 431 & IST 432 | The Information Environment and Legal and Regulatory Environment of Information Science and Technology | 6 |
| Additional Courses | | |
| <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 |
| IST 302 or IST 413 | IT Project Management Usability Engineering | 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 |

Information Systems: Design & Development Option (24 credits)
Available at the following campuses: Abington, Beaver, Berks, Brandywine, Harrisburg, Lehigh Valley, Scranton, University Park, World Campus, York

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

¹ 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: Abington, Beaver, Berks, Brandywine, Greater Allegheny, Harrisburg, Hazleton, Lehigh Valley, Mont Alto, New Kensington, Schuylkill, Scranton, University Park, Wilkes-Barre, World Campus, York

| Code | Title | Credits |
|---|--|---------|
| Prescribed Courses | | |
| <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 |
| Additional Courses | | |
| <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