

# INFORMATION TECHNOLOGY, B.S. (BERKS)

**Begin Campus:** Any Penn State Campus

**End Campus:** Berks

## Degree Requirements

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

| Requirement                | Credits |
|----------------------------|---------|
| General Education          | 45      |
| Electives                  | 7-9     |
| Requirements for the Major | 87-89   |

21 of the 45 credits for General Education are included in the Requirements for the Major. This includes: 9 credits of GWS courses; 6 credits of GQ courses; and 6 credits of GS 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>                                 |   |         |
| <i>Prescribed Courses: Require a grade of C or better</i> |   |         |
| ETI 461   | Database Management and Administration                              | 3       |
| IST 210   | Organization of Data  | 3       |
| IST 220   | Networking and Telecommunications                                   | 3       |
| IST 230   | Language, Logic, and Discrete Mathematics                           | 3       |
| IST 242   | Intermediate & Object-Oriented Application Development              | 3       |
| IST 256   | Programming for the Web   | 3       |
| IST 260W  | Introduction to Systems Analysis and Design                         | 3       |
| IST 302   | IT Project Management   | 3       |
| IST 331   | Foundations of Human-Centered Design                                | 3       |
| IST 440W  | Information Sciences and Technology Integration and Problem Solving | 3       |
| IST 495   | Internship  | 1       |
| SRA 111   | Introduction to Security and Risk Analysis                          | 3       |
| SRA 221   | Overview of Information Security                                    | 3       |

### Additional Courses

|                                |   |  |
|--------------------------------|---|--|
| Select one of the following: 3 |   |  |
| ECON 102                       | Introductory Microeconomic Analysis and Policy      |  |
| ECON 104                       | Introductory Macroeconomic Analysis and Policy      |  |
| PLSC 1                         | American Politics: Principles, Processes and Powers |  |
| PLSC 14                        | International Relations                             |  |
| PSYCH 100                      | Introductory Psychology                             |  |
| SOC 5                          | Social Problems                                     |  |

|   |   |   |
|---|---|---|
| <i>Additional Courses: Require a grade of C or better</i> |   |   |
| ENGL 15   | Rhetoric and Composition                                    | 3 |
| or ENGL 30H   | Honors Rhetoric and Composition                             |   |
| 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                            |   |   |
| CAS 100A  | Effective Speech  |   |
| CAS 100B  | Effective Speech  |   |
| CAS 100C  | Effective Speech  |   |
| Select one of the following: 3                            |   |   |
| CMPSC 121   | Introduction to Programming Techniques                      |   |
| CMPSC 131   | Programming and Computation I: Fundamentals                 |   |
| IST 140   | Introduction to Application Development                     |   |
| Select one of the following: 3                            |   |   |
| CYBER 100   | Computer Systems Literacy                                   |   |
| CYBER 100S  | Computer Systems Literacy                                   |   |
| IST 110   | Information, People and Technology                          |   |
| Select one of the following: 4                            |   |   |
| DS 200  | Introduction to Data Sciences                               |   |
| STAT 200  | Elementary Statistics                                       |   |
| SCM 200   | Introduction to Statistics for Business                     |   |
| Select one of the following: <sup>1</sup> 3-4             |   |   |
| ACCTG 211   | Financial and Managerial Accounting for Decision Making     |   |
| BA 100  | Introduction to Business                                    |   |
| ECON 102  | Introductory Microeconomic Analysis and Policy <sup>2</sup> |   |
| ECON 104  | Introductory Macroeconomic Analysis and Policy <sup>2</sup> |   |
| MGMT 301  | Basic Management Concepts                                   |   |
| MKTG 301  | Principles of Marketing <sup>2</sup>                        |   |
| Select one of the following: <sup>1</sup> 3               |   |   |
| CYBER 262   | Cyber-Defense Studio  |   |
| IST 226   | Networking Essentials                                       |   |
| IST 451   | Network Security  |   |
| IST 454   | Computer and Cyber Forensics                                |   |

### Requirements for the Option

Select an option 18-19

<sup>1</sup> These courses may not double count with other additional or option requirements.

<sup>2</sup> Course does not require a grade of C or better.

### Requirements for the Option

#### Application Development Option (18 credits)

*Available at the following campuses: Abington, Altoona, Beaver, Berks, Brandywine, Lehigh Valley, Schuylkill, Scranton, York*

| Code  | Title                                   | Credits |
|---|---|---------|
| <b>Additional Courses</b>   |   |         |
| <i>Additional Courses: Require a grade of C or better</i>                           |   |         |
| Select 12 credits, with at least 3 credits at the 400 level, from the following: 12 |   |         |
| IST 261   | Application Development Design Studio I |         |

|         |  |  |
|---------|--|--|
| IST 311 | Object-Oriented Design and Software Applications |  |
| IST 361 | Application Development Design Studio II         |  |
| IST 411 | Distributed-Object Computing                     |  |
| IST 412 | The Engineering of Complex Software Systems      |  |
| IST 413 | Usability Engineering                            |  |

**Supporting Courses and Related Areas**

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

Select 6 credits at the 300 or 400 level in Advanced IT courses from College approved list. 6

**Business Applications Option (19 credits)**

*Available at the following campuses: Abington, Altoona, Beaver, Berks, Brandywine, DuBois, Greater Allegheny, Hazleton, Lehigh Valley, Mont Alto, New Kensington, Schuylkill, Scranton, York*

| Code | Title | Credits |
|------|-------|---------|
|------|-------|---------|

**Prescribed Courses**

*Prescribed Courses: Require a grade of C or better*

|           |   |   |
|-----------|---|---|
| ACCTG 211 | Financial and Managerial Accounting for Decision Making | 4 |
|-----------|---|---|

**Additional Courses**

*Additional Courses: Require a grade of C or better*

Select one of the following:<sup>1</sup> 3

|          |                           |  |
|----------|---------------------------|--|
| FIN 301  | Corporation Finance       |  |
| MGMT 301 | Basic Management Concepts |  |
| MKTG 301 | Principles of Marketing   |  |
| SCM 301  | Supply Chain Management   |  |

**Supporting Courses and Related Areas**

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

Select 6 credits from ACCTG, BA, BLAW, EBF, ECON, ENTR, FIN, FINSV, HPA, IB, LER, MIS, MGMT, MKTG, RM, SCM, or STAT, including 3 credits at the 400-level. 6

Select 3 credits at the 300 or 400 level in Advanced IT Business courses from College-approved list. 3

Select 3 credits at the 300 or 400 level in Advanced IT courses from College-approved list. 3

<sup>1</sup> Option courses may not double count with other requirements.

**Custom Information Technology Option (18 credits)**

*Available at the following campuses: Altoona, Berks, Brandywine, Greater Allegheny, Hazleton, Lehigh Valley, Mont Alto, New Kensington, Schuylkill, Scranton, Wilkes-Barre, York*

| Code | Title | Credits |
|------|-------|---------|
|------|-------|---------|

**Supporting Courses and Related Areas**

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

Select 12 credits, with at least 3 credits at the 400 level, in consultation with an adviser that follow a coherent theme in information technology. 12

Select 6 credits at the 300 or 400 level in Advanced IT courses from College-approved list. 6

**Cybersecurity Option (18 credits)**

*Available at the following campuses: Altoona, Beaver, Berks, Brandywine, Lehigh Valley, Mont Alto, New Kensington, Schuylkill, Scranton, York*

| Code | Title | Credits |
|------|-------|---------|
|------|-------|---------|

**Additional Courses**

*Additional Courses: Require a grade of C or better*

Select 12 credits, with at least 3 credits at the 400 level, from the following: 12

|           |                                     |  |
|-----------|-------------------------------------|--|
| CYBER 262 | Cyber-Defense Studio                |  |
| IST 451   | Network Security                    |  |
| IST 454   | Computer and Cyber Forensics        |  |
| IST 456   | Information Security Management     |  |
| SRA 472   | Integration of Privacy and Security |  |

Any 300 or 400 Level CYBER Course

**Supporting Courses and Related Areas**

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

Select 6 credits at the 300 or 400 level in Advanced IT courses from College-approved list. 6

**Networking Option (18 credits)**

*Available at the following campuses: Abington, DuBois, Mont Alto*

| Code | Title | Credits |
|------|-------|---------|
|------|-------|---------|

**Additional Courses**

*Additional Courses: Require a grade of C or better*

Select 12 credits, with at least 3 credits at the 400 level, from the following: 12

|           |                                 |  |
|-----------|---------------------------------|--|
| CYBER 262 | Cyber-Defense Studio            |  |
| IST 225   | PC Hardware Basics              |  |
| IST 226   | Networking Essentials           |  |
| IST 227   | Network Administration          |  |
| IST 228   | Advanced Network Administration |  |
| IST 451   | Network Security                |  |
| IST 454   | Computer and Cyber Forensics    |  |

**Supporting Courses and Related Areas**

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

Select 6 credits at the 300 or 400 level in Advanced IT courses from College-approved list. 6

**Security and Risk Analysis Option (18 credits)**

*Available at the following campuses: Altoona, Berks, Brandywine, Lehigh Valley, Schuylkill*

| Code | Title | Credits |
|------|-------|---------|
|------|-------|---------|

**Additional Courses**

*Additional Courses: Require a grade of C or better*

Select 12 credits, with at least 3 credits at the 400 level, from the following: 12

|         |  |  |
|---------|--|--|
| IST 432 | Legal and Regulatory Environment of Information Science and Technology |  |
| IST 452 | Legal and Regulatory Environment of Privacy and Security               |  |
| IST 456 | Information Security Management  |  |
| SRA 211 | Threat of Terrorism and Crime  |  |
| SRA 231 | Decision Theory and Analysis   |  |
| SRA 311 | Risk Analysis in a Security Context                                    |  |
| SRA 365 | Statistics for Security and Risk Analysis                              |  |

**Supporting Courses and Related Areas**

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

Select 6 credits at the 300 or 400 level in Advanced IT courses from College-approved list.

## 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

## 6 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.