

INFORMATION SCIENCES AND TECHNOLOGY, A.S. (BERKS)

Begin Campus: Berks

End Campus: Berks

Program Description

Not all options are available at every campus. Contact the campus you are interested in attending to determine which options are offered.

This associate degree major is structured to prepare graduates for immediate and continuing employment opportunities in the broad disciplines of information science and technology. This includes positions such as application programmers, associate systems designers, network managers, web designers and administrators, or information systems support specialists. Specifically, the major is designed to ensure a thorough knowledge of information systems and includes extensive practice using contemporary technologies in the creation, organization, storage, analysis, evaluation, communication, and transmission of information. The major fosters communications, interpersonal, and group interaction skills through appropriate collaborative and active learning projects and experiences. Technical material covers the structure of database systems, web and multimedia systems, and considerations in the design of information systems. Team projects in most courses, a required internship, and a second-year capstone experience provide additional, focused venues for involving students in the cutting-edge issues and technologies in the field.

The Associate of Science in IST degree will be offered at multiple campuses within the Penn State system of colleges and campuses. Note that not all options will be available at all locations.

Baccalaureate Option

Available at the following campuses: Berks, DuBois, Greater Allegheny, Mont Alto, New Kensington, Scranton, University Park, Wilkes-Barre, World Campus, York

This option provides maximum articulation with the baccalaureate degree. Students who complete this option will meet all lower division requirements for the baccalaureate degree. This is not the case with the remaining options, although the degree of articulation is quite high for all associate degree options.

Generalized Business Option

Available at the following campuses: Berks, DuBois, Hazleton, Mont Alto, New Kensington, Scranton, University Park, World Campus, York

This option enables students to specialize in the general business areas of accounting, marketing, and management.

Individualized Option

Available at the following campuses: Berks, Greater Allegheny, Hazleton, Mont Alto, New Kensington, Scranton, University Park, Wilkes-Barre, World Campus, York

This option enables students to work closely with an adviser to develop a plan of study that meets the dual objectives of allowing a flexible academic program and providing breadth of technical specialization. An example would be a program where a student would take some of the

courses listed in the Web Administration option and the remainder in the Software option.

Networking Option

Available at the following campuses: DuBois, Mont Alto, Shenango, World Campus, York

This option prepares graduates for positions as entry-level computer network administrators. Students take courses in personal computer hardware, networking essentials, and network administration.

Entrance to Major

Students must have a minimum 2.0 GPA to change to this Associate degree after admission to the University.

Degree Requirements

For the Associate in Science degree in Information Sciences and Technology, a minimum of 60 credits is required:

Requirement	Credits
General Education	21
Electives	4-7
Requirements for the Major	44-46

9-12 of the 21 credits for General Education are included in the Requirements for the Major. For all options, this includes: 3 credits of GQ courses; 6 credits of GWS courses. The Baccalaureate Option also includes 3 credits of GS courses to equal a total of 12 credits that double count; the General Business Option also includes 0-3 credits of GS courses to equal 9-12 credits that double count.

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/associate-degree-general-education-program>) section of the Bulletin and consult your academic adviser.

Foundations (grade of C or better is required.)

- Quantification (GQ): 3 credits
- Writing and Speaking (GWS): 3 credits

Knowledge Domains

- Arts (GA): 3 credits
- Humanities (GH): 3 credits
- Social and Behavioral Sciences (GS): 3 credits
- Natural Sciences (GN): 3 credits

Foundations or Knowledge Domains

- A General Education course selected from GWS, GQ, GN, GA, GH, or GS, and may include Integrative Studies (Inter-domain or Linked) courses: 3 credits

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.

University Degree Requirements

Cultures Requirement

3 credits of United States (US) or International (IL) cultures coursework are required and may satisfy other requirements

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 60 degree credits must be earned for a associates degree. The requirements for some programs may exceed 60 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

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		
CAS 100B	Effective Speech	3
ENGL 15	Rhetoric and Composition	3
<i>Prescribed Courses: Require a grade of C or better</i>		
CMPSC 101	Introduction to Programming	3
IST 110	Information, People and Technology	3
IST 111S	Seminar in Information Sciences and Technology	1
IST 210	Organization of Data	3
IST 220	Networking and Telecommunications	3
IST 250	Introduction to Web Design and Development	3
IST 260	Introduction to Systems Analysis and Design	3
Additional Courses		
ENGL 202C or ENGL 202D	Effective Writing: Technical Writing Effective Writing: Business Writing	3
<i>Additional Courses: Require a grade of C or better</i>		
IST 295A or IST 295B	Distributed Team Project IST Internship	1

Requirements for the Option

Select an option 15-17

Requirements for the Option

Baccalaureate Option (17 credits)

Available at the following campuses: Berks, DuBois, Greater Allegheny, Mont Alto, New Kensington, Scranton, University Park, Wilkes-Barre, World Campus, York

Code	Title	Credits
Prescribed Courses		
ECON 102	Introductory Microeconomic Analysis and Policy	3
STAT 200	Elementary Statistics	4
<i>Prescribed Courses: Require a grade of C or better</i>		
IST 230 & IST 240	Language, Logic, and Discrete Mathematics and Introduction to Computer Languages	6
Additional Courses		
MATH 110 or MATH 140	Techniques of Calculus I Calculus With Analytic Geometry I	4

Generalized Business Option (15-16 credits)

Available at the following campuses: Berks, DuBois, Hazleton, Mont Alto, New Kensington, Scranton, University Park, World Campus, York

Code	Title	Credits
Additional Courses		
Select 15 credits in consultation with the adviser from the following list:		15
ACCTG 151	Introductory Financial Accounting I	
ACCTG 152	Introductory Financial Accounting II	
ACCTG 211	Financial and Managerial Accounting for Decision Making	
BA 250	Small Business Management	
ECON 102 or ECON 104 or ECON 14	Introductory Microeconomic Analysis and Policy Introductory Macroeconomic Analysis and Policy Principles of Economics	
MATH 17 or MATH 21 or MATH 22 or MATH 26	College Algebra I College Algebra II and Analytic Geometry Plane Trigonometry	
MGMT 100	Survey of Management	
MGMT 150	Supervisory Management	
MGMT 321	Leadership and Motivation	
MGMT 341	Human Resource Management	
MKTG 220	Introduction to Selling Techniques	
MKTG 221	Contemporary American Marketing	
MKTG 310	Public Relations and Marketing	
MKTG 327	Retailing	

Individualized Option (15 credits)

Available at the following campuses: Berks, Greater Allegheny, Hazleton, Mont Alto, New Kensington, Scranton, University Park, Wilkes-Barre, World Campus, York

Code	Title	Credits
Supporting Courses and Related Areas		
<i>Supporting Courses and Related Areas: Require a grade of C or better</i>		

Select 15 credits in consultation with an adviser that follow a coherent theme in information sciences and technology with a grade of C or better required for all IST courses.

Networking Option (15 credits)

Available at the following campuses: DuBois, Mont Alto, Shenango, World Campus, York

Code	Title	Credits
Prescribed Courses		
<i>Prescribed Courses: Require a grade of C or better</i>		
IST 225	PC Hardware Basics	3
IST 226	Networking Essentials	3
IST 227	Network Administration	3
IST 228	Advanced Network Administration	3
Additional Courses		
Select one of the following:		3
MATH 17		
MATH 21	College Algebra I	
MATH 22	College Algebra II and Analytic Geometry	
MATH 26	Plane Trigonometry	

Program Learning Objectives

- 1. Know the System Development Lifecycle (SDL):** Demonstrate knowledge of the SDL by applying its methods to network projects and various networking hand-on lab exercises.
- 2. Know Networking Systems and Industry Methods:** Demonstrate ability to apply various industry standards in networking, server maintenance, and hardware standards.
- 3. Use Information Sciences Theory/Practice:** Use management theory and information technology processes in managing networks. Which includes best practices for network and infrastructure design, development, and implementation.
- 4. Manage Network Systems:** Demonstrate knowledge of designing and management various networking systems.
- 5. Know Security Risk Factors:** Demonstrate knowledge technology risk factors for networks, servers, various hardware components and their impact on technology systems. Having the ability to secure various networks, using the latest industry standards and best practices, design, develop, and implement (i.e. securing hardware, software compliance, etc.).

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.

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

Berks

Tricia Clark

Program Coordinator, Instructor
Gaige 211
Reading, PA 19610
610-396-6349
tkc3@psu.edu

DuBois

Jason Long

Assistant Teaching Professor
1 College Place
DuBois, PA 16823
814-372-3000
jel115@psu.edu

Hazleton

Barbara Brazon

Assistant Teaching Professor of Information Sciences and Technology
Kostos 117
Hazleton, PA 18202
570-450-3089
bxb30@psu.edu

Mont Alto

Paul Bart

Lecturer, IST
6 Bookstore Building
Mont Alto, PA 17237
717-749-6241
pjb159@psu.edu

Scranton

Debra Smarkusky

Associate Professor
212F Dawson
Dunmore, PA 18512
570-963-2593
dls102@psu.edu

University Park

Office of Undergraduate Academic Advising

E103 Westgate Building
University Park, PA 16802
814-865-8947
advising@ist.psu.edu

Wilkes-Barre

Wei-Fan Chen

Program Co-Coordinator, IST
P.O. Box 264
Lehman, PA 18627
570-675-9142
weifan@psu.edu

World Campus

Undergraduate Academic Advising

301 Outreach Building

University Park, PA 16802
 814-863-3283
 advising@outreach.psu.edu

York

William Cantor
 Assistant Teaching Professor in IST
 226 Grumbacher Building (GISTC)
 York, PA 17403
 717-771-4143
 wpc2@psu.edu

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*).

Baccalaureate Option at Berks 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 100B (CAS 100A may be substituted with Dean's approval. Consult advisor for details.)	3
IST 110 [*]	3 IST 210 [*]	3
IST 111S [*]	1 MATH 110 or 140	4
IST 250 [*]	3 General Education Course	3
IST 140 or CMPSC 101 ^{*†}	3 Elective	2
General Education Course	3	
	16	15

Second Year

Fall	Credits Spring	Credits
IST 220 [*]	3 ENGL 202C or 202D	3
SCM 200 or STAT 200	4 IST 295A or 295B (Students may wish to enroll in the course over the summer. Students interested in pursuing either the B.A. or B.S. in Information Sciences & Technology degree should consider IST 495. Consult advisor for details.)	1
IST 230 [*]	3 IST 240 or 242 [*]	3
ECON 102 [†]	3 IST 260 (Course fulfills the Writing Across The Curriculum Requirement.) [*]	3

General Education Course	3 Elective	3
	16	13

Total Credits 60

- * 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

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

- ¹ The following courses are offered Fall Semester only: IST 240, 250.
- ² The following courses are offered Spring Semester only: IST 242, 260.

Generalized Business Option at Berks 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 100B (CAS 100A may be substituted with Dean's approval. Consult advisor for details.)	3
IST 110 [*]	3 IST 210 [*]	3
IST 111S [*]	1 Option Requirement	3
IST 250 [*]	3 Option Requirement	3
IST 140 or CMPSC 101 ^{*†}	3 General Education Course	3
General Education Course	3	
	16	15

Second Year

Fall	Credits Spring	Credits
IST 220 [*]	3 ENGL 202C or 202D	3
Option Requirement	3 IST 295A or 295B (Students may wish to enroll in the course over the summer. Students interested in pursuing either the B.A. or B.S. in Information Sciences & Technology degree should consider IST 495. Consult advisor for details.) [*]	1

Option Requirement	3 IST 260 (Course fulfills the Writing Across The Curriculum Requirement.)*	3
General Education Course	3 Option Requirement	3
General Education Course	3 Elective	4
	15	14

Total Credits 60

- * 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

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

- ¹ The following courses are offered Fall Semester only: IST 250.
- ² The following courses are offered Spring Semester only: IST 260.
- ³ For Option Requirement, consult adviser for list.

Individualized Option at Berks 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 100B (CAS 100A may be substituted with Dean's approval. Consult adviser for details.)	3
IST 110*	3 IST 210*	3
IST 111S*	1 Option Requirement*	3
IST 250*	3 Option Requirement*	3
IST 140 or CMPSC 101 ^{†‡}	3 General Education Course	3
General Education Course	3	
	16	15

Second Year

Fall	Credits Spring	Credits
IST 220*	3 ENGL 202C or 202D	3

Option Requirement*	3 IST 295A or 295B (Students may wish to enroll in the course over the summer. Students interested in pursuing either the B.A. or B.S. in Information Sciences & Technology degree should consider IST 495. Consult adviser for details.)*	1
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Option Requirement*	3 IST 260 (Course fulfills the Writing Across The Curriculum Requirement.)*	3
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General Education Course	3 Option Requirement*	3
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General Education Course	3 Elective	4
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15

14

Total Credits 60

- * 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

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

- ¹ The following courses are offered Fall Semester only: IST 250.
- ² The following courses are offered Spring Semester only: IST 260.
- ³ For Option Requirement, consult adviser for list. All IST courses require a grade of C or better.

Contact

Berks

EBC DIVISION
 Gaige Building
 Reading, PA 19610
 610-396-6349
 tkc3@psu.edu

<http://berks.psu.edu/associate-information-sciences-and-technology>

DuBois

1 College Place
 DuBois, PA 16823
 814-372-3000
 jel115@psu.edu

<http://dubois.psu.edu/ist>

Hazleton

Kostos 117
Hazleton, PA 18202
570-450-3089
bxb30@psu.edu

<http://hazleton.psu.edu/associate-science-information-sciences-technology>

<http://york.psu.edu/academics/baccalaureate/information-sciences-and-technology>

Mont Alto

6 Bookstore Building
Mont Alto, PA 17237
717-749-6241
pjb159@psu.edu

<http://montalto.psu.edu/directory/baccalaureate-information-technology-program>

Scranton

212F Dawson
Dunmore, PA 18512
570-963-2593
dls102@psu.edu

<http://worthingtonscranton.psu.edu/information-sciences-and-technology>

University Park

OFFICE OF THE ASSOCIATE DEAN FOR GRADUATE AND
UNDERGRADUATE STUDIES
E397F Westgate Building
University Park, PA 16802
814-863-3450
programs@ist.psu.edu

https://ist.psu.edu/directory/office/grad_undergrad_studies

Wilkes-Barre

P.O. Box 264
Lehman, PA 18627
570-675-9142
weifan@psu.edu

<http://wilkesbarre.psu.edu/academics/ist/associate-degrees>

World Campus

OFFICE OF THE ASSOCIATE DEAN FOR GRADUATE AND
UNDERGRADUATE STUDIES
E397F Westgate Building
University Park, PA 16802
814-863-3450
programs@ist.psu.edu

<https://www.worldcampus.psu.edu/degrees-and-certificates/information-sciences-and-technology-associates/overview>

York

226 Grumbacher Building (GISTC)
York, PA 17403
717-771-4143
wpc2@psu.edu