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

Begin Campus: Any Penn State Campus

End Campus: Beaver, Brandywine, Greater Allegheny, Hazleton, Lehigh Valley, Mont Alto, New Kensington, Wilkes-Barre, Scranton, York

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 major is structured to provide students with the theoretical frameworks and skill sets necessary to compete and be productive in the information technology-intensive global context that defines the new "Information Age." Specifically, the degree will be focused on a program that will build an understanding of core information technologies and related areas of study; will prepare students for the practical application of various information sciences and related technologies; and engage students in sharpening their abilities to think critically and to work in teams. All this will be done with considerable interdisciplinary integration in order to expose students to the cognitive, social, institutional, and global environments of IST. Team projects in most courses, a required internship, and a senior capstone experience provide additional, focused venues for involving students in the cutting-edge issues and technologies of the field.

Information Context: People, Organizations, and Society Option

Available at the following campuses: Beaver, Berks, Scranton, University Park

This option focuses on how information technology affects social change and the delivery of information to the consumer. This includes the human-machine interface; organization and retrieval of information; digital libraries; information and telecommunications services; information and media industry structures; software services and intermediaries; telecommunications and information law and policy; sociological aspects of technology change; multimedia; and art, design, and aesthetics.

Information Systems: Design & Development Option

Available at the following campuses: Abington, Beaver, Berks, Brandywine, Harrisburg, Lehigh Valley, Scranton, University Park, World Campus, York

This option is designed to prepare students to use information technology to realize a variety of system-based goals (e.g., reliability, accessibility, efficiency, etc.). It is focused on developing a theoretical foundation and the skill set needed for integrating information technology into different systems for the purpose of enhancing system performance. The emphasis is on providing the student with both the theoretical frameworks needed to use information technology as a system attribute as well as a set of application-oriented experiences and skills.

What is Information Sciences and Technology?

Information Sciences and Technology is a discipline that explores how we can strengthen the power of information and technology, and use it to increase human potential. This includes focusing on creating innovative systems and technological solutions that benefit businesses, organizations, and individuals, and understanding the role of technology in how we live our lives.

MORE INFORMATION ABOUT INFORMATION SCIENCES AND TECHNOLOGY (https://ist.psu.edu/prospective/undergraduate/academics/ist/)

You Might Like This Program If...

- You want to develop new software and web applications, help businesses operate more effectively by creating and implementing technological solutions, or understand how technology is connected to broader social issues.
- You are interested in technology but also want to work with people.
- You enjoy coming up with creative solutions to difficult challenges.

MORE INFORMATION ABOUT WHY STUDENTS CHOOSE TO STUDY INFORMATION SCIENCES AND TECHNOLOGY (https://ist.psu.edu/prospective/undergraduate/academics/ist/)

Entrance to Major

To be eligible for entrance to the Information Sciences and Technology (ISTBS) major, students must:

1. have completed the following entrance-to-major requirements with a grade of C or better in each: IST 110; IST 140 (or equivalent CMPSC 101 or CMPSC 121) IST 210; and IST 220.
2. have achieved a minimum cumulative grade point average of 2.00 prior to and through the end of the semester during which the entrance-to-major procedure is carried out.

Entrance to the Integrated Undergraduate-Graduate (IUG) Program

The Integrated Undergraduate Graduate (IUG) program is available for strong undergraduate students who wish to pursue a bachelor’s and master’s degree in a shorter period of time than would be necessary if the degrees were pursued separately. Information Sciences and Technology undergraduates may apply for admission to the ISTBS/ISTMS IUG program as early as February 15 of their sophomore year and no later than February 15 of their junior year after completing a minimum of 60 credits, if they meet the following admission requirements:
1. Must be enrolled in the ISTBS undergraduate degree program.
2. Must have completed 60 credits of an ISTBS undergraduate degree program.
3. Must have an overall GPA of 3.5 (on a 4.0 scale) in undergraduate coursework and a minimum GPA of 3.5 in all coursework completed for the major.
4. Must apply to and be accepted without reservation into the Graduate School and M.S. program in Informatics. Students must complete the Graduate School application (http://gradschool.psu.edu/apply/).
5. Must apply to the IUG program by February 15 of their junior year.

Degree Requirements

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

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Education</td>
<td>45</td>
</tr>
<tr>
<td>Electives</td>
<td>8</td>
</tr>
<tr>
<td>Requirements for the Major</td>
<td>84</td>
</tr>
</tbody>
</table>

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 (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.)
- 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)

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>STAT 200</td>
<td>Elementary Statistics</td>
<td>4</td>
</tr>
</tbody>
</table>

Prescribed Courses: Require a grade of C or better

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       |

Prescribed Courses:
Information Sciences and Technology, B.S. (University College)

Available at the following campuses: Abington, Beaver, Berks, Brandywine, Harrisburg, Lehigh Valley, Scranton, University Park, World Campus, York

Information Systems: Design & Development Option (24 credits)

Prescribed Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>IST 242</td>
<td>Intermediate &amp; Object-Oriented Application Development</td>
<td>3</td>
</tr>
<tr>
<td>IST 311</td>
<td>Object-Oriented Design and Software Applications</td>
<td>3</td>
</tr>
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</table>

Additional Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>IST 240</td>
<td>Introduction to Computer Languages</td>
<td>3</td>
</tr>
<tr>
<td>or IST 242</td>
<td>Intermediate &amp; Object-Oriented Application Development</td>
<td>3</td>
</tr>
<tr>
<td>IST 411</td>
<td>Distributed-Object Computing</td>
<td></td>
</tr>
<tr>
<td>IST 412</td>
<td>The Engineering of Complex Software Systems</td>
<td>3</td>
</tr>
<tr>
<td>IST 413</td>
<td>Usability Engineering</td>
<td></td>
</tr>
</tbody>
</table>

Supporting Courses and Related Areas

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

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

Prescribed Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>IST 302</td>
<td>IT Project Management</td>
<td>3</td>
</tr>
<tr>
<td>IST 420</td>
<td>Fundamentals of Systems and Enterprise Integration</td>
<td>3</td>
</tr>
<tr>
<td>IST 421</td>
<td>Advanced Enterprise Integration: Technologies and Applications</td>
<td>3</td>
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</tbody>
</table>

Additional Courses

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<td>Introduction to Computer Languages</td>
<td>3</td>
</tr>
<tr>
<td>or IST 242</td>
<td>Intermediate &amp; Object-Oriented Application Development</td>
<td>3</td>
</tr>
</tbody>
</table>

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)

Program Learning Objectives

Beaver and Greater Allegheny Campuses

- Understand and apply the interdisciplinary, theoretical knowledge of the information sciences.
- Understand, apply and adapt various problem solving strategies, using appropriate technology and methods.
- Communicate and work effectively (both individually and in teams)
• Understand professional responsibilities in terms of the ethical, legal, security and social aspects of any given problem and its solution.

• Commit to the continuous acquisition of relevant knowledge for professional development by self-teaching and/or on-going education and learning.

Brandywine, Hazleton, Lehigh Valley, Mont Alto, Schuylkill, Scranton, and York Campuses

• Communication (Individual and Team): Communicate and work effectively (both individually and in teams) with a range of perspectives and audiences through a variety of media
  • Participate effectively on teams in order to accomplish a common goal
  • Communicate effectively with a range of audiences, formally or informally, through writing and the spoken word
  • Seek out, analyze, and incorporate diverse ideas and broader perspectives represented in the diversity of people
  • Demonstrate respectful and inclusive choices in interacting with customers, peers, supervisors, and/or subordinates with a diversity of identity characteristics (e.g., age, ancestry, color, disability or handicap, national origin, race, religious creed, sex, sexual orientation, gender identity, or veteran status)

• Knowledge/Application: Understand and apply the interdisciplinary, theoretical knowledge of the information sciences or security sciences
  • Define and explain the core concepts, principles, processes, and theories within the academic majors of IST and/or SRA
  • Apply the core concepts of the academic majors of IST and/or SRA to real-world problems

• Lifelong Learning: Commit to the continuous acquisition of relevant knowledge for professional development by self-teaching and/or on-going education and learning
  • Employ information-seeking strategies and self-directed learning in pursuit of current knowledge
  • Enroll and participate in professional development and tutoring opportunities

• Problem-Solving: Demonstrate, apply and adapt various problem solving strategies, using appropriate technology and methods
  • Identify information problems and/or opportunities in terms of the human, informational and technology dimensions
  • Analyze issues surrounding the problem and/or opportunity in terms of the human, informational, and technology dimensions; and determine the requirements appropriate to understanding the situation
  • Design systems, architectures, processes, components, or programs to meet desired needs of the human context at varying levels of analysis (e.g., individual, group, organization, society, and/or world)
  • Deploy up-to-date, relevant and appropriate techniques, methodologies, and/or tools necessary for understanding opportunities and constraints and/or the optimal design, implementation and continuance of an information based solution
  • Evaluate the success of systems, architecture, processes, components, or programs intended to meet desired needs of the human context at varying levels of analysis (e.g., individual, group, organization, society, and/or world)

• Professional Responsibilities: Understand professional responsibilities in terms of the ethical, legal, security and social aspects of any given problem and its solution
  • Demonstrate an understanding of the cognitive, social, legal, ethical, diversity, and security perspectives surrounding a given problem
  • Assess the impact of information, computing and technology on individuals, groups, organizations, society, and the world for the purpose of making informed decisions from a sociological, governmental, legal, and/or security perspective.

New Kensington Campus

• Knowledge/Application: Understand and apply the interdisciplinary, theoretical knowledge of the information sciences.

• Communication: Communicate and work effectively (both individually and in teams) with a range of perspectives and audiences through a variety of media.

Wilkes-Barre Campus

• Apply the core concepts of the academic majors of IST to real-world problems.

• Identify information problems and/or opportunities in terms of the human, informational and technology dimensions.

• Analyze issues surrounding the problem and/or opportunity in terms of the human, informational, and technology dimensions; and determine the requirements appropriate to understanding the situation.

• Design systems, architectures, processes, components, or programs to meet desired needs of the human context at varying levels of analysis (e.g., individual, group, organization, society, and/or world).

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 (https://senate.psu.edu/policies-and-rules-for-undergraduate-students/32-00-advising-policy/)

Beaver

Richard Lomotey, Ph.D.
Asst Prof. of IST, and Program Coordinator
100 University Drive
Monaca, PA 15061
rkl5137@psu.edu

Brandywine

Nannette D’Imperio
Lecturer in Computer Science
25 Yearsley Mill Road
Suggested Academic Plan

The suggested academic plan(s) listed on this page are the plan(s) that are in effect during the 2021-22 academic year. To access previous years' suggested academic plans, please visit the archive (https://bulletins.psu.edu/undergraduate/archive/) to view the appropriate
### Beaver Campus

**Design and Development Option: Information Sciences and Technology, B.S. at Beaver 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

<table>
<thead>
<tr>
<th>Fall</th>
<th>Credits</th>
<th>Spring</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>IST 110*</td>
<td>3 IST 220*</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>IST 111S</td>
<td>1 CMPSC 121*</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>IST 210*</td>
<td>3 CAS 100</td>
<td>3</td>
<td></td>
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<tr>
<td>ENGL 15 or 30H</td>
<td>3 STAT 200</td>
<td>4</td>
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<tr>
<td>MATH 110 or 140</td>
<td>4 General Education Course</td>
<td>3</td>
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</table>

| General Education Course (GHW) | 1.5 |

Total Credits 15.5

#### Second Year

<table>
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<tr>
<th>Fall</th>
<th>Credits</th>
<th>Spring</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>IST 230*</td>
<td>3 IST 242*</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>IST 301*</td>
<td>3 Support of Option</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>ECON 104</td>
<td>3 General Education Course</td>
<td>3</td>
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</table>

| General Education Course | 3 General Education Course | 3 |

| World Language 001 | 4 World Language 002 | 4 |

| IST 390 | 1 |

Total Credits 16

#### Third Year

<table>
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<tr>
<th>Fall</th>
<th>Credits</th>
<th>Spring</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>IST 261*</td>
<td>3 IST 402 (even years)*</td>
<td>3</td>
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</tr>
<tr>
<td>IST 311*</td>
<td>3 IST 411*</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>IST 331*</td>
<td>3 IST 413 (odd years)*</td>
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<tr>
<td>ENGL 202C or 202D</td>
<td>3 ENGL 202C or 202D</td>
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| General Education Course | 3 Foreign Cultures Requirement | 3 |

#### Fourth Year

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<tr>
<th>Fall</th>
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<th>Spring</th>
<th>Credits</th>
<th>Summer</th>
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<tr>
<td>IST 261*</td>
<td>3 IST 440W*</td>
<td>3 IST 495*</td>
<td>1-18</td>
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</tbody>
</table>

| Foreign Cultures Requirement | 3 Support of Option | 3 |

| General Education Course | 3 General Education Course | 3 |

| Elective | 3 General Education Course (GHW) | 1.5 |

| Elective | 3 |

Total Credits 12-13.5 1-18

### 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.
Technology and Integration Option: Information Sciences and Technology, B.S. at Beaver Campus

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<tr>
<th>Fall</th>
<th>Credits</th>
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<tbody>
<tr>
<td>IST 110*</td>
<td>3</td>
<td>IST 220*</td>
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<tr>
<td>IST 111S</td>
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<td>4 General Education Course</td>
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<td>General Education Course (GHW)</td>
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<td>3</td>
<td>IST 242*</td>
<td>3</td>
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<tr>
<td>IST 301*</td>
<td>3</td>
<td>Support of Option</td>
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<td>ECON 104</td>
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<td>General Education Course</td>
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<td>World Language 001</td>
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<td>IST 390</td>
<td>1</td>
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### Third Year

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<tr>
<th>Fall</th>
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<td>IST 331*</td>
<td>3</td>
<td>IST 402 (even years)*</td>
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<td>3</td>
<td>IST 421 (odd years)*</td>
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</tr>
<tr>
<td>General Education Course</td>
<td>3 Foreign Cultures Requirement</td>
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<tr>
<td>General Education Course</td>
<td>3 Support of Option</td>
<td>3</td>
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<tr>
<td>World Language 003</td>
<td>4 ENGL 202C or 202D</td>
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<td></td>
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### Fourth Year

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<tr>
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<th>Spring</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Foreign Cultures Requirement</td>
<td>3 IST 440W*</td>
<td>3 IST 495*</td>
<td>1-18</td>
</tr>
<tr>
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<td>3 Support of Option</td>
<td>3</td>
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<tr>
<td>General Education Course</td>
<td>3 General Education Course</td>
<td>3</td>
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<tr>
<td>Elective</td>
<td>3 General Education Course (GHW)</td>
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<tr>
<td>Elective</td>
<td>3 Elective</td>
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<td>15</td>
<td>13.5</td>
<td>1-18</td>
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</tbody>
</table>

**Total Credits 125-142**

* 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).

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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.
**Brandywine Campus**

**Design and Development Option: Information Sciences and Technology, B.S. at Brandywine Campus**

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### First Year

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**Total Credits 15-17**

### Second Year

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**Total Credits 15-17**

### Third Year

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<td>IST 311*</td>
<td>3 IST 411 or 413*</td>
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**Total Credits 15**

### Fourth Year

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<td>IST 412 or 413*</td>
<td>3 Support of Option Course*</td>
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<td>Foreign Cultures Course</td>
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<td></td>
</tr>
<tr>
<td>General Education Course</td>
<td>3 Elective</td>
<td>3</td>
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<tr>
<td>General Education Course</td>
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</table>

**Total Credits 15**

**Total Credits 121-126**

* 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

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1 Course is not required for graduation but strongly encouraged as an elective course prior to registering for IST 495
2 One internship for credit is required to complete degree requirements. A maximum of three internships for credit are allowed. Students are encouraged to schedule and complete during summer, though an internship can be scheduled and completed any semester, with Internship Coordinator approval, following the first year.
# Integration and Application Option: Information Sciences and Technology, B.S. at Brandywine 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

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<th>Fall</th>
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<td>MATH 110 or 140††</td>
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## Second Year

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## Third Year

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<td>IST 302†</td>
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<td>IST 420†</td>
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<td>ENGL 202C or 202D††</td>
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<td>3 Support of Option Course*</td>
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<td>General Education Course</td>
<td>3</td>
<td>Foreign Cultures Course</td>
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## Fourth Year

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<tr>
<td>IST 402 (or other IST 400-level emerging issues course)*</td>
<td>3</td>
<td>IST 440W*</td>
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<td>Foreign Cultures Course</td>
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<td><strong>15</strong></td>
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**Total Credits 121-126**

* Course requires a grade of C or better for the major
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**DuBois Campus**

**Integration and Application Option: Information Sciences and Technology, B.S. at DuBois Campus**

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### First Year

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<td>MATH 21</td>
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### Second Year

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<td>IST 260W</td>
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<td>MATH 110</td>
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### Third Year

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<td>IST 302</td>
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**Greater Allegheny Campus**  
**Integration and Application Option: Information Sciences and Technology, B.S. at Greater Allegheny Campus**

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<td>MATH 110 or 140††</td>
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<td><strong>Fall</strong></td>
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<td>IST 301*</td>
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<td>IST 331*</td>
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<td>General Education Course</td>
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<td>General Education Course</td>
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<td>General Education Course (GHW)</td>
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<tr>
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**Total Credits 126-127**

- Course requires a grade of C or better for the major
- Course satisfies General Education and degree requirement

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**Hazleton Campus**

**Integration and Application Option: Information Sciences and Technology, B.S. at Hazleton Campus**

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<th>Credits</th>
<th>Spring</th>
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<td>MATH 110 or 140</td>
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<td>CMPSC 101 or IST 140†</td>
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<td>4 World Language Level 2</td>
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**Second Year**

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<td>4 CAS 100‡</td>
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**Third Year**

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<td>3 IST 420†</td>
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<td>3 Supporting Courses 200-400 Level ¹</td>
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<td>General Education Course</td>
<td>3 Support Option ¹</td>
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<td>General Education Course (GHW)</td>
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**Fourth Year**

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<tr>
<td>IST 402*</td>
<td>3 Supporting Course 400 Level ¹</td>
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<td>Support Option ¹</td>
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<td>Foreign Culture Course</td>
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</table>

**Total Credits 125**

* 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, 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.

¹ Consultation with adviser is recommended for proper course selection
Lehigh Valley Campus

Design and Development Option: Information Sciences and Technology, B.S. at Lehigh Valley 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.

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<th>First Year</th>
<th>Fall</th>
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<td>3</td>
<td>IST 220*#</td>
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<td>IST 230*</td>
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<td>3 IST 402*</td>
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<td>4xx Supporting Course</td>
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<th>Spring</th>
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<tbody>
<tr>
<td>Foreign Culture Selection</td>
<td>3 IST 495*</td>
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<td>3 IST 440W †</td>
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<td>3 Foreign Culture Selection</td>
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<td>General Education Course</td>
<td>3 Supporting Course: SRA 211 recommended</td>
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Total Credits 123

* Course requires a grade of C or better for the major
† Course satisfies General Education and degree requirement
‡ Course requires a grade of C or better for General Education

University Requirements and General Education Notes:

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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.

Students must demonstrate or complete the third level of proficiency in one foreign language.
Integration and Application Option: Information Sciences and Technology, B.S. at Lehigh Valley 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

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<tbody>
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<td>IST 210*#</td>
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<tr>
<td>MATH 110†‡</td>
<td>ECON 102 or 104†</td>
</tr>
<tr>
<td>ENGL 15†</td>
<td>General Education Course</td>
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<tr>
<td>PSU 8 (or General Education Course)</td>
<td>General Education Course</td>
</tr>
<tr>
<td>World Language 1†</td>
<td>World Language 2†</td>
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Second Year

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<td>STAT 200†‡</td>
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<td>IST 250*</td>
<td>CAS 100A†</td>
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Third Year

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<tr>
<td>IST 302*</td>
<td>ENGL 202C or 202D†</td>
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<tr>
<td>IST 331*</td>
<td>Support of Option</td>
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Fourth Year

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Total Credits 126

* 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
Mont Alto Campus

Integration and Application Option: Information Sciences and Technology, B.S. at Mont Alto 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

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Second Year

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Third Year

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<td>IST 302†</td>
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<td>IST 420*</td>
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Fourth Year

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Total Credits 127

Advising Notes:

• SRA 111 is not required, but highly recommended
• For the B.S. degree in Information Sciences and Technology, a minimum of 125 credits is required.

1 In consultation with adviser
2 Summers: Supervised work experience where the student is employed in an information science and technology position in industry, government, or academia. All IST students are required to take at least one internship and make take as many as three.

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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.
New Kensington Campus
Integration and Application Option: Information Sciences and Technology, B.S. at New Kensington Campus

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<th>Fall</th>
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<tbody>
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### Second Year

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<th>Fall</th>
<th>Credits</th>
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<td>STAT 200 (GQ)*</td>
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### Third Year

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<tr>
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<th>Credits</th>
<th>Spring</th>
<th>Credits</th>
<th>Summer</th>
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<td>Foreign Cultures Requirement (See adviser for list)</td>
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### Fourth Year

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<tr>
<td>IST 421*</td>
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<td>Foreign Culture*</td>
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**IST 402H**
3 Support of Option Course

**IST 440W**
3 General Education Course

Support of Option Course
3 Elective

General Education Course
3 Elective

**Total Credits 126-143**

* Course requires a grade of C or better for the major
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‡ Course is an Entrance to Major requirement
† Course satisfies General Education and degree requirement

### University Requirements and General Education Notes:

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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.
Integration and Application Option with Security and Risk Analysis Minor: Information Sciences and Technology, B.S. at New Kensington 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.

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<tr>
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<td>IST 220</td>
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<td>MATH 110 (GQ)</td>
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<td>ENGL 15 (GWS)</td>
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<td>World Language 002</td>
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<td>SRA 111 (GS)</td>
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<td>CAS 100 (GWS)</td>
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<td>IST 302 (option requirement)</td>
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<td>IST 420 (option requirement)</td>
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<td>SRA 221</td>
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<td>IST 452</td>
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<td>Elective</td>
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<td>ENGL 202C or 202D (GWS)</td>
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<td>General Health and Wellness (GHW)</td>
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<td>Foreign Cultures Requirement (See adviser for list)</td>
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<td>IST 451</td>
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Total Credits: 126-143

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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.
Scrubton Campus

**Design and Development Option: Information Sciences and Technology, B.S. at Scrubton Campus**

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<td>ENGL 15</td>
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<td>IST 220*</td>
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<tr>
<td>IST 110*</td>
<td>3</td>
<td>ECON 102, 104, or 14†</td>
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<tr>
<td>IST 140 or CMPSC 121†</td>
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<td>Foreign Cultures (IL)</td>
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<tr>
<td>MATH 110 or 140†</td>
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<td>General Education Course</td>
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<td>IST 242*</td>
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<td>CAS 100A</td>
<td>3</td>
<td>STAT 200†</td>
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<td>World Language level 1</td>
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### Third Year

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<td>IST 261 or 361</td>
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<td>IST 311*</td>
<td>3</td>
<td>IST 411†</td>
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<td>Support of Option Course</td>
<td>3</td>
<td>ENGL 202C or 202D†</td>
<td>3</td>
</tr>
<tr>
<td>World Language level 3</td>
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<td>Foreign Cultures (IL)</td>
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<td>General Education Course</td>
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### Fourth Year

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<tbody>
<tr>
<td>IST 331*</td>
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<td>IST 440W*</td>
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<td>IST 412*</td>
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<td>IST 495*</td>
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**Total Credits 125**

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**Program Notes**

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**Advising Notes**

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## Integration and Application Option: Information Sciences and Technology, B.S. at Scranton Campus

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<td>ENGL 15</td>
<td>3</td>
<td>IST 220*#</td>
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<tr>
<td>IST 110</td>
<td>3</td>
<td>ECON 102, 104, or 14†</td>
<td>3</td>
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<tr>
<td>CMPSC 101 or IST 140*</td>
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<td>Foreign Cultures (IL)</td>
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<td>MATH 110 or 140†</td>
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### Second Year

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<th>Fall Credits</th>
<th>Spring Credits</th>
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<tbody>
<tr>
<td>IST 230*</td>
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<td>IST 240 or 242*</td>
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<tr>
<td>CAS 100A</td>
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<td>STAT 200†</td>
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<td>World Language level 1</td>
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<td>World Language level 2</td>
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<tr>
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<td>IST 440W</td>
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<td>3</td>
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**Wilkes-Barre Campus**

**Integration and Application Option: Information Sciences and Technology, B.S. at Wilkes-Barre Campus**

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### Third Year

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<td>World Language level 3</td>
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<td>Support of option</td>
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### Fourth Year

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<td>Foreign Culture</td>
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<td>Elective</td>
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<td><strong>Total</strong></td>
<td><strong>12</strong></td>
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</table>

**Total Credits: 122-126**

*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 is an Entrance to Major requirement

1. MATH 110 and 140 require a C or better.

**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.

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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.

**Program Notes:**

Students must also complete an internship, IST 495. This one-credit course represents 300 hours of a supervised work experience where the student is employed in an information science and technology position in industry, government or academia. All ISSUC students are required to take one internship and may take as many as three. It is recommended that students engage in as many internship opportunities as possible.
York Campus
Integration and Application Option: Information Sciences and Technology, B.S. at York 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.

<table>
<thead>
<tr>
<th>First Year</th>
<th>Credits</th>
<th>Spring Credits</th>
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<tbody>
<tr>
<td>ENGL 15 or 30H‡</td>
<td>3</td>
<td>IST 210*</td>
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<tr>
<td>IST 110*</td>
<td>3</td>
<td>IST 220*</td>
</tr>
<tr>
<td>IST 111S</td>
<td>1</td>
<td>STAT 200 or SCM 200</td>
</tr>
<tr>
<td>CMPSC 101 or 121†</td>
<td>3</td>
<td>ECON 102 or 104</td>
</tr>
<tr>
<td>General Education course (GHW)</td>
<td>1.5</td>
<td>Support course (IST 250 recommended)</td>
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<tr>
<td>General Education course</td>
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<tr>
<td><strong>Total Credits 14.5</strong></td>
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<thead>
<tr>
<th>Second Year</th>
<th>Credits</th>
<th>Spring Credits</th>
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<tbody>
<tr>
<td>CAS 100‡</td>
<td>3</td>
<td>ENGL 202C or 202D‡</td>
</tr>
<tr>
<td>MATH 110</td>
<td>4</td>
<td>IST 230*</td>
</tr>
<tr>
<td>IST 140*#</td>
<td>3</td>
<td>IST 242*</td>
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<tr>
<td>Support course (IST 260W recommended)</td>
<td>3</td>
<td>IST 495*</td>
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<tr>
<td>General Education course</td>
<td>3</td>
<td>General Education course (GHW)</td>
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<tr>
<td>General Education course</td>
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<td></td>
</tr>
<tr>
<td><strong>Total Credits 16</strong></td>
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<thead>
<tr>
<th>Third Year</th>
<th>Credits</th>
<th>Spring Credits</th>
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<tbody>
<tr>
<td>IST 301*</td>
<td>3</td>
<td>IST 331*</td>
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<tr>
<td>IST 302*</td>
<td>3</td>
<td>IST 420*</td>
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<tr>
<td>Support course (IST 311 recommended)</td>
<td>3</td>
<td>World Language course</td>
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<tr>
<td>World Language course</td>
<td>4</td>
<td>Foreign Culture course</td>
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<tr>
<td>General Education course</td>
<td>3</td>
<td>General Education course</td>
</tr>
<tr>
<td><strong>Total Credits 16</strong></td>
<td><strong>16</strong></td>
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<table>
<thead>
<tr>
<th>Fourth Year</th>
<th>Credits</th>
<th>Spring Credits</th>
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<tbody>
<tr>
<td>IST 421*</td>
<td>3</td>
<td>IST 440W*</td>
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<tr>
<td>IST 4XX Emerging issues and Technologies (From college approved list)</td>
<td>3</td>
<td>General Education course</td>
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<tr>
<td>World language</td>
<td>4</td>
<td>Elective</td>
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<tr>
<td>Foreign Culture course</td>
<td>3</td>
<td>General Education courses</td>
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<tr>
<td>Support Course (400-level, IST 413 recommended)</td>
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<tr>
<td><strong>Total Credits 16</strong></td>
<td><strong>16</strong></td>
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</table>

Total Credits 125

* 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.
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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.

Program Notes
- Scheduling patterns for courses not taught each semester: Some major/option courses are offered only fall or spring semester, as listed on guide.
- Depending on the placement test, students may be required to take MATH 110. Since MATH 110 is a prerequisite for IST 230, students who are required to take MATH 110 must plan their math sequence carefully in order to graduate in four years.
- Sample Foreign Cultures: ANTH 45, CMLIT 3, FR 139, GER 100, SPAN 130, 131, all IL designated courses count.
- Sample Support Courses: (12 credits required) ECON 102, 104, MGMT 301, SOC 1. Students may take up to two 100-level courses and are required to take one 400-level course.
- Integration & Application Option: Required courses (9 credits): IST 302, 420, 421.
- Note: There are limited opportunities for students to use one course to satisfy more than one requirement. Contact your academic adviser for details.
- IST 495 (internship) may be spread over several semesters (consult with IST internship adviser)
Design and Development Option: Information Sciences and Technology, B.S. at York 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

<table>
<thead>
<tr>
<th>Fall</th>
<th>Credits</th>
<th>Spring</th>
<th>Credits</th>
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<tbody>
<tr>
<td>ENGL 15 or 30H†</td>
<td>3 IST 210*</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>IST 110*</td>
<td>3 IST 220*</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>IST 111S</td>
<td>1 STAT 200 or SCM 200</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>CMPSC 101 or 121*</td>
<td>3 ECON 102 or 104</td>
<td>3</td>
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</tr>
<tr>
<td>General Education course (GHW)</td>
<td>1.5 Support course (IST 250 recommended)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>General Education course</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total Credits</strong></td>
<td><strong>14.5</strong></td>
<td><strong>16</strong></td>
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Second Year

<table>
<thead>
<tr>
<th>Fall</th>
<th>Credits</th>
<th>Spring</th>
<th>Credits</th>
</tr>
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<tbody>
<tr>
<td>CAS 100†</td>
<td>3 ENGL 202C or 202D†</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>MATH 110</td>
<td>4 IST 230*</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>IST 140*</td>
<td>3 IST 242*</td>
<td>3</td>
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<tr>
<td>Support course (IST 260W recommended)</td>
<td>3 IST 495*</td>
<td>1</td>
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<tr>
<td>General Education course</td>
<td>3 General Education course</td>
<td>3</td>
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<tr>
<td>General Education course (GHW)</td>
<td>1.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total Credits</strong></td>
<td><strong>16</strong></td>
<td><strong>14.5</strong></td>
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Third Year

<table>
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<tr>
<th>Fall</th>
<th>Credits</th>
<th>Spring</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>IST 301*</td>
<td>3 IST 331*</td>
<td>3</td>
<td></td>
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<tr>
<td>IST 311*</td>
<td>3 IST 361*</td>
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<td>World Language course</td>
<td>4 IST 411*</td>
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<td>Foreign Culture course</td>
<td>3 World Language course</td>
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<td>General Education course</td>
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<tr>
<td><strong>Total Credits</strong></td>
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Fourth Year

<table>
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<tr>
<th>Fall</th>
<th>Credits</th>
<th>Spring</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>IST 4XX Emerging Issues and Technologies (from college approved list)</td>
<td>3 IST 440W*</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>IST 413*</td>
<td>3 Foreign Culture course</td>
<td>3</td>
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<tr>
<td>World Language course (if needed)</td>
<td>4 Elective</td>
<td>4</td>
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<tr>
<td>Support course (400-level)</td>
<td>3 General Education course</td>
<td>6</td>
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<tr>
<td>General Education course</td>
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<tr>
<td><strong>Total Credits</strong></td>
<td><strong>16</strong></td>
<td><strong>16</strong></td>
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Total Credits 125

* Course requires a grade of C or better for the major
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# Course is an Entrance to Major requirement
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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.

Program Notes:

• Scheduling patterns for courses not taught each semester: Some major/option courses are offered only fall or spring semester, as listed on guide.

• Depending on the placement test, students may be required to start with MATH 4, 21, or 22. Since MATH 110 is a prerequisite for IST 230, students who are required to start with MATH 4, 21, or 22 must plan their math sequence carefully in order to graduate in four years.

• Sample Foreign Cultures: ANTH 45, CMLIT 3, FR 139, GER 100, SPAN 130, 131, all IL designated courses count.

• Sample Support Courses: (9 credits required) ECON 102, 104, MGMT 301, any SRA course, SOC 1 1. Students may take up to two 100-level courses and are required to take one 400-level course.

• Design & Development Option: Required courses (12 credits): IST 311 and 6 credits from IST 411, 412 and/or 413 and 3 credits from IST 261 or IST 361.

• Note: There are limited opportunities for students to use one course to satisfy more than one requirement. Contact your academic adviser for details.

• IST 495 (internship) may be spread over several semesters (consult with IST internship adviser)

Career Paths

IST allows you to explore some of the biggest challenges facing society and work to solve them by leveraging information and using technology. It blends skills from a number of fields – computer science, business, psychology, math, sociology, political science – so you can help people and organizations thrive. IST’s Office of Career Solutions helps students navigate their internship and career development in the field through coaching, workshops, interview preparation, resume reviews, career fairs, job postings, and networking opportunities.

Careers

Because our courses blend technical knowledge with skills in communication and business, an IST degree allows for careers in nearly every industry including consulting, business, government, defense, entertainment, and medicine.
MORE INFORMATION ABOUT POTENTIAL CAREER OPTIONS FOR GRADUATES OF THE INFORMATION SCIENCES AND TECHNOLOGY PROGRAM (https://www.ist.psu.edu/current/careers/development/process/path/)

Contact

Beaver
INFORMATION SCIENCES AND TECHNOLOGY
100 University Drive
Monaca, PA 15061
rkl5137@psu.edu
https://beaver.psu.edu/academics/ist (https://beaver.psu.edu/academics/ist/)

Brandywine
25 Yearsley Mill Road
Media, PA 19063
610-892-1343
nxd13@psu.edu
http://brandywine.psu.edu/information-sciences-and-technology (http://brandywine.psu.edu/information-sciences-and-technology/)

DuBois
1 College Place
DuBois, PA 16823
814-372-3000
jel115@psu.edu
http://dubois.psu.edu/ist (http://dubois.psu.edu/ist/)

Greater Allegheny
101 Frable Building
4000 University Drive
McKeesport, PA 15132
412-675-9140
GA-Academics@lists.psu.edu
http://greaterallegheny.psu.edu/information-sciences-and-technology-bs (http://greaterallegheny.psu.edu/information-sciences-and-technology-bs/)

Hazleton
Kostos 117
Hazleton, PA 18202
570-450-3089
bxb30@psu.edu
http://hazleton.psu.edu/bachelor-science-information-sciences-and-technology (http://hazleton.psu.edu/bachelor-science-information-sciences-and-technology/)

Lehigh Valley
2809 Saucon Valley Road
Center Valley, PA 18034
610-285-5071
kmb6846@psu.edu

Mont Alto
1 Campus Drive
Mont Alto, PA 17237
717-749-6126
jch146@psu.edu

New Kensington
036 Theater & IST Building
3550 Seventh Street Road
New Kensington, PA 15068
724-334-6089
hhs10@psu.edu
https://newkensington.psu.edu/2-year-information-sciences-technology (https://newkensington.psu.edu/2-year-information-sciences-technology/)

Scranton
114B Dawson
120 Ridge View Drive
Dunmore, PA 18512
570-963-2593
dls102@psu.edu

Wilkes-Barre
44 University Drive
Dallas, PA 18612
570-675-9142
weifan@psu.edu
http://wilkesbarre.psu.edu/academics/ist (http://wilkesbarre.psu.edu/academics/ist/)

York
226 Grumbacher Building (GiSTC)
York, PA 17403
717-771-4143
wpc2@psu.edu
http://york.psu.edu/academics/baccalaureate/information-sciences-and-technology (http://york.psu.edu/academics/baccalaureate/information-sciences-and-technology/)

Abington
DIVISION OF SCIENCE AND ENGINEERING
1600 Woodland Road
Abington, PA 19001
267-633-3316
jxo19@psu.edu
Information Sciences and Technology, B.S. (University College)

http://abington.psu.edu/information-sciences-and-technology-ist (http://abington.psu.edu/information-sciences-and-technology-ist/)

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

http://berks.psu.edu/bs-information-sciences-and-technology (http://berks.psu.edu/bs-information-sciences-and-technology/)

**Harrisburg**
SCHOOL OF BUSINESS ADMINISTRATION
Olmsted Building, E355
717-948-6141
ljc43@psu.edu


**University Park**
COLLEGE OF INFORMATION SCIENCES AND TECHNOLOGY
E397 Westgate Building
University Park, PA 16802
814-865-8947

https://ist.psu.edu/about/contact (https://ist.psu.edu/about/contact/)

**World Campus**
COLLEGE OF INFORMATION SCIENCES AND TECHNOLOGY
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https://ist.psu.edu/about/contact (https://ist.psu.edu/about/contact/)