

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

Begin Campus: Any Penn State Campus

End Campus: Abington

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, World Campus

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 focused on expanding the skills needed to develop advanced information technology systems using state-of-the-art tools and techniques. The emphasis is on providing the student with both knowledge in the design, implementation, testing and evolution of complex software systems as well as a set of project-oriented, team-programming experiences.

Information Technology: Integration & Application Option

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

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 (<https://ist.psu.edu/students/undergrad/majors/istbs>)

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 (<https://issuu.com/istpsu/docs/ist-major>)

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 the end of their sophomore year but no later than the end 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 apply to the IUG program by the end of their junior year.

4. Must apply to and be accepted without reservation into the Graduate School and M.S. program in IST. Students must complete the Graduate School application (<http://www.gradschool.psu.edu/apply/?CFID=4347157&CFTOKEN=809212809140639-22E9BF85-AF21-D9DA-933F35E90FB10EAB&jsessionid=84304e7b7ae255ec9a524e5b1e59120e63a>)
5. 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.
6. Must present an approved plan of study. The plan should cover the entire time period of the integrated program, and it should be reviewed periodically with an adviser.
7. Must present two letters of recommendation from faculty members. (Note: For Schreyer Honors College students, these can be the same two letters required by the Schreyer Honors College.)
8. Must meet with both the Director of Undergraduate Academic Affairs and the Graduate Program Coordinator to declare interest and receive information about the IUG program.

For Schreyer Honors College students, students admitted to the IUG program may double-count a maximum of 12 credits toward their graduate and undergraduate degrees in Information Sciences and Technology. Thesis or scholarly paper credits may not double-count.

Degree Requirements

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

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

General Education

Connecting career and curiosity, the General Education curriculum provides the opportunity for students to acquire transferable skills necessary to be successful in the future and to thrive while living in interconnected contexts. General Education aids students in developing intellectual curiosity, a strengthened ability to think, and a deeper sense of aesthetic appreciation. These are requirements for all baccalaureate students and are often partially incorporated into the requirements of a program. For additional information, see the General Education Requirements (<http://bulletins.psu.edu/undergraduate/general-education/baccalaureate-degree-general-education-program>) section of the Bulletin and consult your academic adviser.

The keystone symbol appears next to the title of any course that is designated as a General Education course. Program requirements may also satisfy General Education requirements and vary for each program.

Foundations (grade of C or better is required.)

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

Knowledge Domains

- **Arts (GA):** 6 credits
- **Health and Wellness (GHW):** 3 credits
- **Humanities (GH):** 6 credits

- **Social and Behavioral Sciences (GS):** 6 credits
- **Natural Sciences (GN):** 9 credits

Integrative Studies (may also complete a Knowledge Domain requirement)

• **Knowledge Domain or Approved Linked Courses:** 6 credits

12 credits are included in the Requirements for the Major.

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

This includes 12 credits of General Education courses: 6 credits of GQ courses; 3 credits of GS courses; and 3 credits of GWS courses.

To graduate, a student enrolled in the major must earn a grade of C or better in each course designated by the major as a C-required course, as specified by Senate Policy 82-44 (<http://senate.psu.edu/policies-and-rules-for-undergraduate-students/82-00-and-83-00-degree-requirements/#82-44>).

Common Requirements for the Major (All Options)

Code	Title	Credits
Prescribed Courses		
STAT 200	Elementary Statistics	4
<i>Prescribed Courses: Require a grade of C or better</i>		
IST 110	Information, People and Technology	3
IST 210	Organization of Data	3
IST 220	Networking and Telecommunications	3
IST 230	Language, Logic, and Discrete Mathematics	3
IST 495	Internship	1
IST 301	Information and Organizations	3
IST 331	Foundations of Human-Centered Design	3
IST 440	Information Sciences and Technology Integration and Problem Solving	3

Additional Courses

Additional Courses: Require a grade of C or better

Select one of the following: 3		
CMPSC 101	Introduction to C++ Programming	
CMPSC 121	Introduction to Programming Techniques	
IST 140	Introduction to Application Development	

Select one of the following: 3		
ECON 14	Principles of Economics	
ECON 102	Introductory Microeconomic Analysis and Policy	
ECON 104	Introductory Macroeconomic Analysis and Policy	

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	

Supporting Courses and Related Areas

Attainment of third-level proficiency in a single foreign language ¹	12
Select 6 credits of international courses in foreign culture from College-approved list	6

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

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

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

Requirements for the Option

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

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

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

Additional Courses

Additional Courses: Require a grade of C or better

IST 240	Introduction to Computer Languages	3
or IST 242	Intermediate & Object-Oriented Application Development	
IST 302	IT Project Management	3
or IST 413	Usability Engineering	

Supporting Courses and Related Areas

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

Information Systems: Design & Development Option (24 credits)

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

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.

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

Additional Courses

Additional Courses: Require a grade of C or better

IST 261	Application Development Design Studio I	3
or IST 361	Application Development Design Studio II	
Select 6 credits of the following: 6		
IST 411	Distributed-Object Computing	
IST 412	The Engineering of Complex Software Systems	
IST 413	Usability Engineering	

Supporting Courses and Related Areas

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

Information Technology: Integration & Application Option (24 credits)

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

Code	Title	Credits
Prescribed Courses		
<i>Prescribed Courses: Require a grade of C or better</i>		
IST 302	IT Project Management	3
IST 420	Fundamentals of Systems and Enterprise Integration	3
IST 421	Advanced Enterprise Integration: Technologies and Applications	3

Additional Courses

Additional Courses: Require a grade of C or better

IST 240	Introduction to Computer Languages	3
or IST 242	Intermediate & Object-Oriented Application Development	

Supporting Courses and Related Areas

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

Integrated B.S. in Information Sciences and Technology / M.S. in Information Sciences and Technology

The College of Information Sciences and Technology offers an integrated B.S./M.S. (IUG) program designed to allow academically superior students in the Information Sciences and Technology major to obtain both the bachelor's in Information Sciences and Technology and M.S. degree in Information Sciences and Technology in a shorter period of time than would be necessary if the degrees were pursued separately. The first two to three years of undergraduate coursework follow the same undergraduate curriculum that other students follow in the Information Sciences & Technology major. Interested students may apply for admission to the IUG program no earlier than February 15 of their sophomore year and no later than February 15 of their junior year after completing a minimum of 60 credits. If admitted to the IUG, the final years of study include two graduate courses, IST 504 in the fall and IST 505 in the spring, plus six credits of research methods courses, twelve credits of graduate specialty courses, and six credits of graduate thesis (IST 600) or scholarly paper (IST 594).

(Note: For Schreyer Honors College students, those who complete the graduate thesis for the Master's requirement may use the graduate thesis, itself, to fulfill the undergraduate honors thesis requirement, as well. Honors students who opt for the Master's scholarly paper must also complete an undergraduate honors thesis.)

The integrated B.S. in Information Sciences and Technology/M.S. in Information Sciences and Technology (IUG) degree meets the needs of the most academically talented students in the Information Sciences and Technology undergraduate major. A proportion of these successful students wish to pursue graduate studies sometime after graduation. Offering the IUG benefits these students by offering an accelerated path to a graduate degree. Additionally, the IUG program can provide these students with a more cohesive program of study with opportunities to engage in more comprehensive research leading to both the Bachelor's and Master's degree.

For the B.S. in Information Sciences & Technology/M.S. in Information Sciences & Technology IUG program, a minimum of 125 credits are required for the bachelor's degree and 30 credits for the M.S. degree. Students admitted to the IUG program may double-count a maximum of 12 credits to their graduate and undergraduate degrees. The required 6 credits of IST 504 and IST 505 will apply to both the graduate program and the undergraduate program. Students may choose an additional 6 credits to double-count for both the undergraduate and graduate degrees from the following:

Code	Title	Credits
IST 411	Distributed-Object Computing	3
IST 412	The Engineering of Complex Software Systems	3
IST 413	Usability Engineering	3
IST 420	Fundamentals of Systems and Enterprise Integration	3
IST 421	Advanced Enterprise Integration: Technologies and Applications	3
IST 431	The Information Environment	3

IST 432 Legal and Regulatory Environment of Information Science and Technology 3

Graduate thesis or scholarly paper credits may not double-count.

The objectives of the Integrated Undergraduate Graduate Program include:

1. To offer highly qualified students the opportunity to earn two degrees in less time than it would take to do two sequential degrees. In particular, IUG students may count up to 12 credits towards both their B.S. and M.S. degree requirements.
2. To permit coherent planning of studies through the graduate degree, with advising informed by not only the requirements of the baccalaureate program, but also the longer-range goals of the graduate degree.
3. To introduce undergraduate students to the rigors of both graduate study and graduate faculty.
4. To make the resources of the Graduate School available to IUG students.
5. To allow students with IUG status to benefit from their association with graduate students whose level of work and whose intensity of interest and commitment parallel their own.

Admission Requirements

To initiate the application process, students must submit an *Integrated Undergraduate-Graduate (IUG) Degree in Information Sciences and Technology Form*, a transcript, and two letters of recommendation (both from faculty members) to the IST Graduate Programs Office. The Director of Undergraduate Academic Affairs, in consultation with the Graduate Programs Coordinator, will help undergraduate candidates determine a proposed sequence of courses that will prepare them for acceptance into the Integrated Undergraduate-Graduate (IUG) degree program. Acceptance into the IST IUG program will be determined by the Graduate Recruitment Committee.

Information Sciences and Technology undergraduate majors may apply for admission as early as the end of their sophomore year but no later than the end 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 apply to the IUG program by February 15 of their junior year.
4. Must apply to and be accepted without reservation into the Graduate School and M.S. program in IST.
Students must complete the Graduate School application (<http://www.gradschool.psu.edu/apply/?CFID=4347157&CFTOKEN=809212809140639-22E9BF85-AF21-D9DA-933F35E90FB10EAB&jsessionid=84304e7b7ae255ec9a524e5b1e591250>)
5. 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.
6. Must present an approved plan of study. The plan should cover the entire time period of the integrated program, and it should be reviewed periodically with an adviser.
7. Must present two letters of recommendation from faculty members. (Note: For Schreyer Honors College students, these can be the same two letters required by the Schreyer Honors College.)

- Must meet with both the Director of Undergraduate Academic Affairs and the Graduate Program Coordinator to declare interest and receive information about the IUG program.

For Schreyer Honors College students, students must also follow guidelines and procedures for applying for the IUG in the Schreyer Honors College: <http://www.shc.psu.edu/students/iug/program/>

In addition, applicants must apply to and be admitted to the Graduate School of the Pennsylvania State University at the time of their application to the IUG degree program. These admission standards are high, as it is thought the program will only be appropriate for students with high levels of academic skills. The program area does have discretion in admitting Information Sciences and Technology majors into the integrated program, and extenuating circumstances can always be considered in terms of possible admission. Individuals who are unable to be admitted into the integrated program of study can apply for regular admission to the graduate program when they complete their undergraduate program of study.

Sample Sequence of Graduate Coursework in Addition to Undergraduate Courses

Students admitted to the IUG program may double-count a maximum of 12 credits toward their graduate and undergraduate degrees in Information Sciences and Technology. In their senior year, IUG students will take 6 credits of specified graduate work, courses IST 504 and IST 505, and 6 credits of methods courses. These 6 credits of IST 504 and IST 505 will apply to both the graduate program and the undergraduate IST/B.S. support of option requirement. In their super senior year, students may choose an additional 6 credits to double-count for both the undergraduate and graduate degrees. These courses must be at the 400-level or above. Students may choose any 400-level undergraduate option course (see below) that they are using to fulfill an undergraduate option requirement and apply the credits to both the undergraduate option requirement and the graduate specialty course requirement.

Code	Title	Credits
IST 411	Distributed-Object Computing	3
IST 412	The Engineering of Complex Software Systems	3
IST 413	Usability Engineering	3
IST 420	Fundamentals of Systems and Enterprise Integration	3
IST 421	Advanced Enterprise Integration: Technologies and Applications	3
IST 431	The Information Environment	3
IST 432	Legal and Regulatory Environment of Information Science and Technology	3

Credits associated with the thesis or culminating scholarly paper, i.e., IST 600 and IST 594, may not be double-counted. However, for Schreyer Honors College students, the Master's thesis deliverable, itself, may double-count for the undergraduate thesis deliverable requirement.

First Year		
Fall	Credits Spring	Credits
IST 504	3 IST 505	3
Methods course ¹	3 Methods course ¹	3
	6	6

Second Year

Fall	Credits Spring	Credits
IST 600 or 594	3 IST 600 or 594	3
Grad Speciality Course ¹	3 Grad Speciality Course ¹	3
Grad Speciality Course ¹	3 Grad Speciality Course ¹	3
	9	9

Total Credits 30

- Choose graduate level methods course after consultation in advance with the student's faculty adviser.

Choose any 400 or 500 level course that contributes to the student's chosen area of specialty with a maximum of six credits at the 400 level.

The total resulting credits will be a minimum of 155 credits, with 125 credits completed for the undergraduate IST degree. Twelve graduate credits will be completed in the senior year, and the remaining 18 graduate credits will be completed in the super senior year.

If for any reason a student admitted to the B.S./M.S. program is unable to complete the requirement for the Master of Science degree program in Information Sciences and Technology, the student will be permitted to receive the Bachelor's degree assuming all degree requirements have been satisfactorily completed.

Student performance will be monitored on an ongoing basis by the student's adviser and Graduate Programs. Students admitted to the integrated program must maintain a minimum cumulative GPA of a 3.3 overall and a minimum 3.0 GPA in all courses used toward the M.S. degree in order to maintain good academic standing and meet graduation requirements. (See information on Grade-Point Average in the Graduate Bulletin: <http://bulletins.psu.edu/graduate/degreerequirements/masters#>) For Schreyer Honors College students in the IUG program, students must maintain a minimum cumulative GPA of 3.4 overall and a minimum 3.0 GPA in all courses used toward the M.S. degree in order to maintain good academic standing and meet graduation requirements. Successful completion of a Schreyer Scholar's Master's thesis will be accepted as completion of the honors thesis requirement.

Program Learning Objectives

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.

Problem-Solving:

- Understand, 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).

- d. Deploy up-to-date 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.
- e. 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).

Communication (Individual and Team):

1. Communicate and work effectively (both individually and in teams) with a range of perspectives and audiences through a variety of media.
 - a. Participate effectively on teams in order to accomplish a common goal.
 - b. Communicate effectively with a range of audiences, formally or informally, through writing and the spoken word.
 - c. Seek out, analyze, and incorporate diverse ideas and broader perspectives represented in the diversity of people.
 - d. Make 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 identify, or veteran status).

Professional Responsibilities:

1. Understand professional responsibilities in terms of the ethical, legal, security and social aspects of any given problem and its solution.
 - a. Demonstrate an understanding of the cognitive, social, legal, ethical, diversity, and security perspectives surrounding a given problem.
 - b. 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.

Lifelong Learning:

1. Commit to the continuous acquisition of relevant knowledge for professional development by self-teaching and/or on-going education and learning.
 - a. Employ information-seeking strategies and self-directed learning in pursuit of current knowledge.
 - b. Enroll in professional development and tutoring opportunities.

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 need to plan the chosen program of study, and referrals to other specialized resources.

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

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Suggested Academic Plan

Integration and Application Option at Abington 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	Summer	Credits
IST 110 ^{*#}	3	IST 210 ^{*#}	3	IST 495 ¹	1
IST 140 or CMPSC 121 [*]	3	IST 220 ^{*#}	3		
World Language Level 1	4 or 6	World Language Level 2	4 or 6		
MATH 110 or 140 (GQ)	4	ENGL 15 or 30 (GWS)	3		
		General Education Course	3		
		14-16	16-18		1
Second Year					
Fall	Credits	Spring	Credits	Summer	Credits
IST 230 [*]	3	IST 240 or 242 [*]	3	IST 495 ¹	1
ECON 102 or 104 (GS)	3	STAT 200 or SCM 200 (GQ)	4		
World Language Level 3 (if needed)	4	CAS 100A or 100B (GWS)	3		
General Education Course	3	General Education Course	3		
General Education Course	3	General Education Course	3		
		16	16		1
Third Year					
Fall	Credits	Spring	Credits	Summer	Credits
IST 301 [*]	3	IST 331 [*]	3	IST 495 ¹	1
IST 302 [*]	3	IST 420 [*]	3		
Support of Option	3	ENGL 202C or 202D (GWS)	3		
General Education Course	3	Support of Option	3		
General Education Course	3	Foreign Culture (IL)	3		
		15	15		1
Fourth Year					
Fall	Credits	Spring	Credits	Summer	Credits
IST 421 [*]	3	IST 440 (GWS) [*]	3		
IST 402, 451, or 461 [*]	3	Support of Option	3		
Support of Option	3	General Education Course	3		

Foreign Culture (IL)	3 Elective	3-4
General Education Course	3 Elective	3
		15
		15-16
Total Credits 125-130		

* 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 IST 495 - One internship for credit is required to complete degree requirements, a maximum of three internships for credit are allowed. Should be scheduled and completed during summer and can be scheduled as early as the first year.

Support of Option Notes

Any non-required IST course can be used as a Support of Option. For example: IST 250, IST 261, IST 311.

Design and Development Option at Abington 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 Summer	Credits
IST 110 ^{*#}	3 IST 210 ^{*#}	3 IST 495 ¹	1
IST 140 or CMPSC 121 [*]	3 IST 220 ^{*#}	3	
World Language Level 1	4 or 6 World Language Level 2	4 or 6	
MATH 110 or 140 (GQ)	4 ENGL 15 or 30 (GWS)	3	

		14-16	16-18	1
		General Education Course	3	
Second Year				
Fall	Credits Spring	Credits Summer	Credits	
IST 230 [*]	3 IST 242 [*]	3 IST 495 ¹	1	
IST 261 [*]	3 Support of Option (Web/Mobile App or Game Development recommended) [*]	3		
CAS 100A or 100B (GWS)	3 STAT 200 or SCM 200 (GQ)	4		
ECON 102 or 104 (GS)	3 General Education Course	3		
World Language Level 3 (if needed)	4 General Education Course	3		
		16	16	1
Third Year				
Fall	Credits Spring	Credits Summer	Credits	
IST 301 [*]	3 IST 411 or 413 [*]	3 IST 495 ¹	1	
IST 311 [*]	3 Support of Option (IST 361, Application Development Design Studio II recommended)	3		
IST 331 [*]	3 ENGL 202C or 202D (GWS)	3		
General Education Course	3 Foreign Culture (IL)	3		
General Education Course	3 General Education	3		
		15	15	1
Fourth Year				
Fall	Credits Spring	Credits		
IST 412 or 413 [*]	3 IST 440 (GWS) [*]	3		
IST 402 (or 4xx Emerging Issues and Technologies) [*]	3 Support of Option (Web/Mobile App or Development recommended) [*]	3		
Foreign Culture (IL)	3 General Education Course	3		
General Education Course	3 Elective	3-4		

General Education Course	3 Elective	3
	15	15-16
<hr/>		
Total Credits 125-130		

* 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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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 IST 495 - One internship for credit is required to complete degree requirements, a maximum of three internships for credit are allowed. Should be scheduled and completed during summer and can be scheduled as early as the first year.

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, psychology, math, business, 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 government, defense, consulting, business, entertainment, and medicine.

MORE INFORMATION

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