Information Sciences and Technology Programs

PennState
World Campus

A world of possibilities.
Online.

Table of Contents

"Welcome to Penn State's College of Information Sciences and Technology. The University has a long-standing tradition of educating students from around the world. And the College of IST, now more than 20 years old, is renowned for offering high-caliber programs that center on a student-first approach, helping you meet the ever-evolving challenges of this dynamic field. We invite you to explore this brochure and consider how we can help you pursue your career goals as you add a highly respected credential to your résumé."

—Dr. Nicklaus A. Giacobe
   Director, Undergraduate Programs

—Dr. Edward J. Glantz
   Director, Master's Programs

Online Information Sciences and Technology Programs

Penn State's online information sciences and technology (IST) portfolio offers programs that combine technical knowledge with practical skills that can be applicable to positions in a wide range of industries. You'll receive the same high-quality education provided by Penn State's residential programs, delivered online through Penn State World Campus. You can study anywhere, anytime — meeting your personal and professional commitments as you learn.

Find the program that is right for you

Penn State has undergraduate and graduate degree and certificate programs for all levels of IT experience. Whether you're just starting out in the field or ready to take your career to the next level, we can help you gain skills to leverage immediately in your current position and for long-term career success. In some instances, the credits you earn in a certificate program may be applicable to a related degree, so you can add a credential to your résumé while you pursue your education.

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Undergraduate Certificate in Information Sciences and Technology (IST)

Prepare for an entry-level IT position with this 12-credit online certificate program that covers data organization, the networking and telecommunications industries, new media, and how the web uses emerging technologies. You can also learn how IT issues relate to broader business strategies.

Undergraduate Certificate in Security and Risk Analysis (SRA)

The 15-credit online SRA certificate program covers information systems, information assurance (both digital and physical security), and intelligence analysis. Topics include social and legal issues related to security — particularly identity theft and social engineering — plus risk analysis and risk mitigation, crime intelligence and forensics, and information warfare and assurance.

Many of the credits you earn by successfully completing either of these certificates may be applied to the requirements for Penn State's Associate in Science in IST, Bachelor of Science in IST, or Bachelor of Science in Security and Risk Analysis, if you apply and are granted admission to one of those programs.

Associate in Science in Information Sciences and Technology

Penn State's Associate in Science in IST helps you respond to the changing needs of the IT industry and is structured to prepare you for employment opportunities in a wide range of industries. It is ideal for working IT professionals with little or no formal background in IT and for IT novices who want to pursue a career in technology management.

Curriculum

This 60-credit online degree program can prepare you for such positions as computer support specialist, network administrator, application programmer, and information support specialist. You can also learn to manage others and gain experience in the nontechnical aspects of organizations. There are multiple options to tailor your degree, including:

Application Development Option
This option can prepare you for entry-level positions in applications development and/or web development. Courses cover topics such as web development and advanced java programming as well as usability.

Generalized Business Option
This option allows you to specialize in the general business areas of accounting, marketing, and management. It is designed to provide the foundational aspects of the business environment and to prepare you for additional employment opportunities or re-entry into the workplace.

Custom Option
The custom option allows you to use a variety of courses to meet the degree requirements while providing you with a technical specialization to meet your professional objectives. You'll work with an academic adviser to make sure that the courses you take will apply to the degree.

Cybersecurity Option
The cybersecurity option allows you to take technical courses that will lead you to an exciting career in the most explosive job markets. Take courses in computer programming and cybersecurity foundations, as well as security and risk analysis.

Networking Option
This option focuses on network administration and computer networking. It may also help prepare you if you plan to take IT certification exams.

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Bachelor of Science in Information Sciences and Technology

As the IT field continues to change and evolve, it takes more than just experience to open doors to new opportunities. You need a respected education from an accredited university. If you want to move ahead in your current position — or change fields altogether — and improve your earning potential, this bachelor's degree is a great way to prepare for that next step.

The online Bachelor of Science in IST is designed to provide you with the tools you need for a successful career in the global marketplace. The program can help you enhance your knowledge of core information technologies and prepare you to apply that knowledge in a practical setting.

Curriculum

Penn State's 125-credit program focuses on developing the skill set required for integrating information technology into different systems to maximize and enhance system performance. The emphasis is on providing you with the frameworks you need to use information technology as a system attribute as well as a set of application-oriented experiences and skills.

**Information Systems:
Design and Development Option**
Expand your knowledge to create advanced technology systems, using state-of-the-art tools to develop applications and software, troubleshoot technology, and solve complex coding challenges.

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Bachelor of Science in Enterprise Technology Integration

The B.S. in Enterprise Technology Integration (ETI) in the College of Information Sciences and Technology will help you prepare to be competitive and productive across all sectors of today's information technology—intensive workplace. You can learn the fundamentals of system interconnection, data interchange, process modeling and re-engineering, and distributed computing environments. You can gain knowledge and skills in analyzing the needs of an organization, formulating and implementing technology-based solutions, and evaluating the outcomes.

Curriculum

Courses in the 124-credit B.S. in ETI cover areas of programming, database management, cloud architecture and computing, systems integration, and enterprise analytics. Working with your adviser, you may focus your elective courses on a discipline related to ETI, including business, economics, human-computer interaction, and cybersecurity.

Successful graduates of this online ETI program will be able to develop software that integrates disparate systems as well as manage associated data in traditional and cloud-based architectures. This major will help you prepare for careers in IT and business consulting, systems integration, and more.

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Bachelor of Science in Cybersecurity Analytics and Operations

This four-year degree program is designed to help students master the technical skills, risk management strategies, and analytical methods used to safeguard data and systems while analyzing security and communicating vulnerability issues to top-level decision-makers. Penn State's internationally acclaimed faculty conduct cutting-edge research that aims to solve information security problems across the globe. Some of the problems these researchers tackle involve detecting threats of information misuse, assessing privacy protection in social networks, exploring malware behaviors, and developing innovative software analysis and verification technologies.

Curriculum

This 123-credit online cybersecurity program has a strong foundation in programming and mathematics. Students pursuing this degree can learn:

› to protect digital information, data stores, and computer networks from threats

› defense strategies used to anticipate, recognize, and defend against cyber attacks

› how to work on a team to solve technical problems for organizations

Bachelor of Science in Security and Risk Analysis — Information and Cybersecurity

As the use of technology becomes more prolific, the need for cybersecurity increases, and with it, the need for cybersecurity professionals who can recognize threats and address vulnerabilities that exist today and others that may be on the horizon. Security and risk analysis explores the integrated processes that can help decision-makers understand factors that negatively influence operations and outcomes and can reduce vulnerabilities, protect resources, and optimize investments.

Our online bachelor of science program is designed to provide you with a skill set that is increasingly in demand in the global marketplace. The program prepares you to address a wide range of security and risk domains, including national/homeland security, emergency and disaster management, and law and crime, as well as enterprise risk management.

Curriculum

The 120-credit B.S. in Security and Risk Analysis explores the general frameworks and theories of information security and related risk analyses. The courses were designed to introduce you to the tools and skills needed for assuring information confidentiality and integrity (e.g., social, economic, technology-related, and policy issues), as well as the strengths and weaknesses of various methods for assessing and mitigating associated risk and vulnerabilities.

"I needed complete flexibility for when I did my course work, and Penn State World Campus was ideal for me. The field of IST emphasizes teamwork, and my courses reflected that with lots of group projects. It feels awesome to know that I've gotten my degree, and it was absolutely worth it!"

**—Larry W., Graduate
B.S. in Security and Risk Analysis**

Graduate Certificate in Information Systems Cybersecurity

This 15-credit online certificate program offers a bridge for individuals without an academic or professional background in the field to gain a foundation in information systems cybersecurity. As a student in this program, you will study the principles, models, tools, and applications in information security, focusing on network security, risk management, digital forensics, crisis and disaster management, and web security and privacy.

The curriculum is designed so that the 15 credits you earn may be applied to the Master of Professional Studies in Cybersecurity Analytics and Operations, if you apply and are accepted into the program.

"One of the most beneficial things about being part of Penn State World Campus is that I got to work in teams with such a diverse group of students. For me, to be a Penn Stater means being a part of a community that encourages, motivates, includes, and accepts people who are studying at a distance."

—Curt C., Graduate
Master of Professional Studies in Cybersecurity Analytics and Operations

Master of Professional Studies in Cybersecurity Analytics and Operations

Cybersecurity and information assurance are redefining how we do business at all levels of corporations and governments. Insider threats, cyber espionage, and threats to our national infrastructure from rogue organizations demand highly trained and capable individuals with the skills to recognize and prevent these crimes.

The knowledge and skills that you can acquire in the online Master of Professional Studies in Cybersecurity Analytics and Operations program have broad government and industry application. Key concepts, such as identifying and mitigating the insider threat or using structured analytics to improve situational awareness, are critical to ensuring information confidentiality, integrity, and accessibility. This program is designed to improve the knowledge and skills of cybersecurity specialists, whether they are managing medical records, conducting information operations against rogue nations, or mitigating a network intrusion at a major financial center.

Curriculum

The Master of Professional Studies in Cybersecurity Analytics and Operations is a 33-credit degree program that you can complete in as little as 24 months, on a part-time basis. The course work provides an in-depth exploration into the nature of information and networks; the threat posed by cyberspace; and the prevention of unwanted intrusions, corruption, and unexpected losses from natural or man-made disasters.

The National Security Agency and the Department of Homeland Security have designated Penn State as a National Center of Academic Excellence in Cyber Defense. The designation demonstrates Penn State's commitment to academic excellence in information security and assurance education.

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Master of Science in Information Science

Acquire the knowledge and skills needed to meet evolving IT challenges in integration, security, and business continuity. The information science graduate degree, offered in partnership with Penn State Great Valley, is designed for mid-level information technology professionals who want to improve their skills, increase their knowledge, and move into leadership or management positions within the IT field.

Earn stackable credentials on the way to your degree

In this program, you can earn three valuable graduate certificates to recognize your new skills and knowledge while you work toward your master's degree — without any additional course work, course fees, or application fees. Stackable credentials are a great way to gain new skills, update your résumé, and accelerate the ROI of your master's program. To reach the 33 credits required to earn the Master of Science in Information Science, you'll work on:

Graduate Certificate in Business Process Integration (9 credits)

Learn to analyze, architect, design, implement, and manage the technical aspects of an enterprise IT system to meet business objectives. Explore the latest theories in information science, including cloud computing, blockchain, machine learning, and more.

Graduate Certificate in IT Analytics (9 credits)

Gain the predictive analytics skills needed to design, build, and monitor IT infrastructure to effectively support business operations. Learn by working with real-world data using the R statistical system and Python programming language.

Graduate Certificate in Cyber Threat Analytics and Prevention (12 credits)

Enhance your understanding of cyber threats, attacks, laws, analytics, and terrorism, as well as network vulnerabilities, system threats, and surveillance protocols.

Capstone experience (3 credits)

Engage in guided research endeavors either individually or in small groups, resulting in a scholarly paper for the M.S. program.

Frequently Asked Questions

Why is Penn State the best choice for me?

Flexibility and convenience

Penn State knows that adults need flexible and convenient learning options to continue meeting their professional and personal commitments. As job responsibilities grow increasingly complex and family schedules become more hectic, online education enables you to study at times and locations that are ideal for you.

Reputation

Penn State is universally regarded as one of the finest educational institutions in the United States. Putting a Penn State degree or certificate on your résumé is a great way to prove to current and potential employers that you are a well-educated professional and to broaden your career options.

Accreditation

Penn State is accredited by the Middle States Commission on Higher Education and has an outstanding reputation as a research and teaching university. Our courses are also accepted by most other colleges and universities in fulfillment of their requirements.

Is this the real Penn State?

Absolutely. Penn State values online education as highly as it does resident instruction. No distinction will be made on your official Penn State transcript or degree that your courses were completed at a distance. The credits you receive are exactly the same as those awarded to on-campus students.

How will I interact with my instructor and other students?

You will be part of a group of students in each course in your program, and we use a variety of means to bring students and instructors together, including asynchronous electronic threaded discussions on the course website and email.
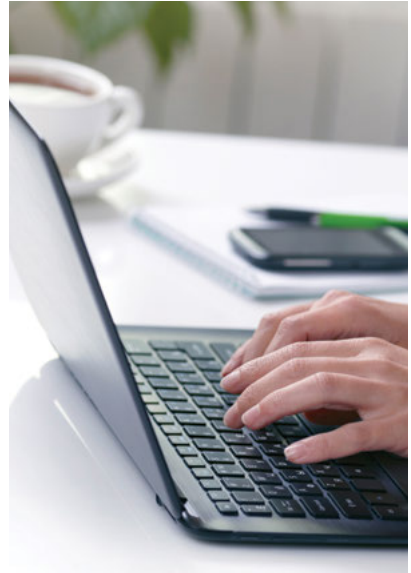
What types of student support are available?

Penn State has developed a nationally recognized support system for students who are geographically removed from campus. Our academic advisers, technical support experts, customer service representatives, and Penn State instructors will help you get where you want to go — successfully — through distance education.

Begin Your Application Today

Beginning your application for any of the information sciences and technology programs is easy.

Visit **worldcampus.psu.edu/infosci**

1. Select your program of interest to be directed to that specific program page.

2. Click on the "How to Apply" link to get your specific application instructions.

For the most up-to-date information about the programs, their requirements, and application procedures, please visit: **worldcampus.psu.edu/infosci**

Did You Know?

› Penn State credits and degrees earned online are identical to those earned on campus.

› Penn State World Campus has enrolled students from all 50 states and all 7 continents.

› Our online courses involve frequent interactions among students and faculty.

Contact Us

Admissions Questions

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