

# CYBERSECURITY ANALYTICS AND OPERATIONS, B.S. (CAPITAL)

**Begin Campus:** Any Penn State Campus

**End Campus:** Harrisburg

## Program Description

The Bachelor of Science in Cybersecurity Analytics and Operations in the College of Information Sciences and Technology (IST) is an interdisciplinary program that prepares students for careers as cybersecurity professionals. It educates students on the essential concepts of cyber-defense and the analytical fundamentals of cybersecurity, with a focus on the analytical and risk management underpinnings and associated cyber-defense techniques and strategies for ensuring the safety of online information stored in large and heterogeneous networks that are embedded within and across the complex socio-technical infrastructures that are pervasive in today's business, government and military organizations. Students will acquire the knowledge and skills needed to critically assess and respond to modern information security threats, using approaches that are grounded in a holistic understanding of adversarial strategies and effective responses. More specifically, it will offer an in-depth and domain-independent approach to the development of skills in cyberdefense technologies, tools and processes; cybersecurity analytics and visualization; and cybersecurity risk analysis and management. The major draws from concepts and skills associated with a number of disciplines, including information science, management science, statistics and data science, human behavior, and law/policy. Graduates will be prepared to join the rapidly growing cybersecurity workforce deployed across organizations of diverse sizes and missions.

## What is Cybersecurity Analytics and Operations?

Cybersecurity is a field that deals with the protection of computer systems, networks, programs, and data from attacks and unauthorized access. This includes the development of cyber defense tools to protect critical infrastructure as well as the analysis and mitigation of cyber threats.

Cybersecurity is a very broad field. This program focuses students beyond the information technology field and instead focuses on the analysis of cybersecurity data, identification of cyber incidents, understanding the actions of malware, communication of concerns to business stakeholders and the general public. High performing cyber analysts have a strong mathematical and computational background. They often employ computer programming and scripting to solve problems and integrate existing tools. They analyze the data they are presented with from intrusion detection sensors, firewalls, and anti-malware tools.

Cybersecurity professionals apply their skills for organizations to prevent cyber criminals, hacktivists, and persistent nation-state actors. They protect organizations, companies, healthcare institutions, and government agencies from the loss of confidential data. They keep

abreast of new developments technically, as well as those in the work domain of the organization and events that occur in the world at large.

MORE INFORMATION ABOUT CYBERSECURITY ANALYTICS AND OPERATIONS (<https://ist.psu.edu/prospective/undergraduate/academics/cybersecurity/>)

## You Might Like This Program If...

- You enjoy working with and on computers as well as their operating systems and applications.
- You have an interest in business and organizations and securing
- You want to protect digital information, data stores, and computer networks from threats.
- You want to learn the cyber defense strategies used to anticipate, recognize, and defend against computer attacks.
- You're passionate about how we can keep sensitive information out of the hands of hackers, cybercriminals, and terrorist organizations.
- You enjoy working on a team to solve technical problems for organizations.
- You are interested in computer programming and mathematics.

MORE INFORMATION ABOUT WHY STUDENTS CHOOSE TO STUDY CYBERSECURITY ANALYTICS AND OPERATIONS (<https://ist.psu.edu/prospective/undergraduate/academics/cybersecurity/>)

## Entrance to Major

To be eligible for the Cybersecurity Analytics and Operations major, students must:

1. Have completed the following entrance-to-major requirements with a grade of C or better in each: CYBER 100 or CYBER 100S, IST 210, IST 220, IST 242 or CMPSC 122 or CMPSC 132, and STAT 200 or SCM 200.
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 is requested.

## Degree Requirements

**For the B.S. degree in Cybersecurity Analytics and Operations, a minimum of 123 credits is required:**

| Requirement                | Credits |
|----------------------------|---------|
| General Education          | 45      |
| Electives                  | 3       |
| Requirements for the Major | 87      |

**12 of the 45 credits for General Education are included in the Requirements for the Major. This includes: 6 credits of GQ courses, 3 credits of GS courses, 3 credits of GWS courses.**

## Requirements for the Major

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

| Code  | Title | Credits |
|---|-------|---------|
| <b>Prescribed Courses</b>                                 |       |         |
| <i>Prescribed Courses: Require a grade of C or better</i> |       |         |

|   |  |   |
|---|--|---|
| CYBER 221   | Overview of Information Security                                       | 3 |
| CYBER 262   | Cyber-Defense Studio   | 3 |
| CYBER 342W  | Cyber Incident Handling and Response                                   | 3 |
| CYBER 362   | Cybersecurity Analytics Studio   | 3 |
| CYBER 366   | Malware Analytics  | 3 |
| CYBER 440   | Cybersecurity Capstone   | 3 |
| CYBER 451   | Network Security   | 3 |
| CYBER 454   | Computer and Cyber Forensics   | 3 |
| CYBER 456   | Information Security Management  | 3 |
| IST 210   | Organization of Data   | 3 |
| IST 220   | Networking and Telecommunications                                      | 3 |
| IST 230   | Language, Logic, and Discrete Mathematics                              | 3 |
| IST 432   | Legal and Regulatory Environment of Information Science and Technology | 3 |
| IST 495   | Internship   | 1 |
| SRA 111   | Introduction to Security and Risk Analysis                             | 3 |
| SRA 211   | Threat of Terrorism and Crime  | 3 |
| SRA 231   | Decision Theory and Analysis   | 3 |
| SRA 311   | Risk Analysis in a Security Context                                    | 3 |
| SRA 365   | Statistics for Security and Risk Analysis                              | 3 |
| <b>Additional Courses</b>                                 |  |   |
| <i>Additional Courses: Require a grade of C or better</i> |  |   |
| CYBER 100   | Computer Systems Literacy  | 3 |
|   | or CYBER 100S Computer Systems Literacy                                |   |
| 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                          |   |
| STAT 200  | Elementary Statistics  | 4 |
|   | or SCM 200 Introduction to Statistics for Business                     |   |
| Select one of the following:                              |  | 3 |
| CMPSC 121   | Introduction to Programming Techniques                                 |   |
| CMPSC 131   | Programming and Computation I: Fundamentals                            |   |
| IST 140   | Introduction to Application Development                                |   |
| Select one of the following:                              |  | 3 |
| CMPSC 122   | Intermediate Programming   |   |
| CMPSC 132   | Programming and Computation II: Data Structures                        |   |
| IST 242   | Intermediate & Object-Oriented Application Development                 |   |
| Select one of the following:                              |  | 3 |
| IST 256   | Programming for the Web  |   |
| IST 261   | Application Development Design Studio I                                |   |
| HCDD 361  | Application Development Design Studio II                               |   |

**Supporting Courses and Related Areas**

Select 9 credits from one of the Application Focus course lists. At least 3 credits must be at the 400-level. Students may also complete a custom Application Focus sequence with approval from an academic adviser and a CYBER undergraduate program coordinator.

**General Education**

Connecting career and curiosity, the General Education curriculum provides the opportunity for students to acquire transferable skills necessary to be successful in the future and to thrive while living in interconnected contexts. General Education aids students in developing

intellectual curiosity, a strengthened ability to think, and a deeper sense of aesthetic appreciation. These are requirements for all baccalaureate students and are often partially incorporated into the requirements of a program. For additional information, see the General Education Requirements (<https://bulletins.psu.edu/undergraduate/general-education/baccalaureate-degree-general-education-program/>) section of the Bulletin and consult your academic adviser.

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

**Foundations (grade of C or better is required and Inter-Domain courses do not meet this requirement.)**

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

**Breadth in the Knowledge Domains (Inter-Domain courses do not meet this requirement.)**

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

**Integrative Studies**

- **Inter-Domain Courses (Inter-Domain):** 6 credits

**Exploration**

- **GN**, may be completed with Inter-Domain courses: 3 credits
- **GA, GH, GN, GS, Inter-Domain courses.** This may include 3 credits of World Language course work beyond the 12th credit level or the requirements for the student's degree program, whichever is higher: 6 credits

**University Degree Requirements****First Year Engagement**

All students enrolled in a college or the Division of Undergraduate Studies at University Park, and the World Campus are required to take 1 to 3 credits of the First-Year Seminar, as specified by their college First-Year Engagement Plan.

Other Penn State colleges and campuses may require the First-Year Seminar; colleges and campuses that do not require a First-Year Seminar provide students with a first-year engagement experience.

First-year baccalaureate students entering Penn State should consult their academic adviser for these requirements.

**Cultures Requirement**

6 credits are required and may satisfy other requirements

- **United States Cultures:** 3 credits
- **International Cultures:** 3 credits

**Writing Across the Curriculum**

3 credits required from the college of graduation and likely prescribed as part of major requirements.

**Total Minimum Credits**

A minimum of 120 degree credits must be earned for a baccalaureate degree. The requirements for some programs may exceed 120 credits.

Students should consult with their college or department adviser for information on specific credit requirements.

### Quality of Work

Candidates must complete the degree requirements for their major and earn at least a 2.00 grade-point average for all courses completed within their degree program.

### Limitations on Source and Time for Credit Acquisition

The college dean or campus chancellor and program faculty may require up to 24 credits of course work in the major to be taken at the location or in the college or program where the degree is earned. Credit used toward degree programs may need to be earned from a particular source or within time constraints (see Senate Policy 83-80 (<https://senate.psu.edu/students/policies-and-rules-for-undergraduate-students/82-00-and-83-00-degree-requirements/>)). For more information, check the Suggested Academic Plan for your intended program.

## Integrated B.S. in Cybersecurity Analytics and Operations and M.P.S. in Cybersecurity Analytics and Operations

*Undergraduate degree available at the following campuses: Abington, Altoona, Beaver, Berks, Brandywine, Greater Allegheny, Harrisburg, Lehigh Valley, Schuylkill, University Park, World Campus York*

*Graduate degree available at the following campuses: World Campus*

Requirements for the Integrated B.S. in Cybersecurity Analytics and Operations and M.P.S. in Cybersecurity Analytics and Operations can be found in the Graduate Bulletin (<https://bulletins.psu.edu/graduate/programs/majors/cybersecurity-analytics-operations/#integratedundergradgradtext>).

## Program Learning Objectives

- **Knowledge/Application:** Understand and apply the interdisciplinary knowledge of information sciences in a security context to recognize, analyze, defend against, and manage cyber risks.
  - Understand the components and interoperability of computer hardware, operating systems, networks and databases.
  - Demonstrate proficiency in programming and scripting to perform Cybersecurity automation and analysis.
  - Understand Cyber threats and appropriate defensive designs and tools to mitigate the risk of attack.
  - Understand the procedures for Cybersecurity Incident Handling and Response.
  - Understand the static and dynamic analysis of malware.
- **Problem-Solving:** Understand, apply and adapt various problem solving strategies, using appropriate technology and methods.
  - Identify Cybersecurity threats and implement complementary defensive measures to mitigate risk.
  - Apply data analytics in a security context to analyze, predict and prevent cyberattacks.
  - Perform malware analysis and forensics to understand the nature and origin of attacks.
  - Evaluate several Cybersecurity frameworks and provide analysis that culminates in a high level executive briefing exercise.
- **Evaluation and 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.

- Synthesize data from multiple sources to help make informed decisions.
- Communicate effectively to a variety of audiences through writing and the spoken word.
- **Professional Responsibilities:** Understand professional responsibilities in terms of the ethical, legal and security policy aspects of information assurance and security.
  - Understand the rules, regulations and issues related to compliance with applicable laws and regulations related to Information Security and Privacy.
  - Understand the legal and ethical ramifications of violating the trust that organizations will place in you as a Cybersecurity professional.
- **Lifelong Learning:** Commit to the continuous acquisition of relevant knowledge for professional development by self-teaching and/or on-going education and certification.
  - Employ information-seeking strategies and self-directed learning in pursuit of current knowledge.
  - Enroll in professional development and pursue industry certifications to enhance your career and the profession.

## 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/students/policies-and-rules-for-undergraduate-students/32-00-advising-policy/>)

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## World Campus

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## Suggested Academic Plan

The suggested academic plan(s) listed on this page are the plan(s) that are in effect during the 2025-26 academic year. To access previous years' suggested academic plans, please visit the archive (<https://bulletins.psu.edu/undergraduate/archive/>) to view the appropriate Undergraduate Bulletin edition.

## Cybersecurity Analytics and Operations, B.S. at Harrisburg 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   |
|---|--|-----------|
| IST 140 <sup>*</sup>                      | 3 MATH 110 (GQ) <sup>†‡</sup>              | 4         |
| SRA 111 (GS) <sup>*</sup>                 | 3 CAS 100A or 100S <sup>‡</sup>            | 3         |
| CYBER 100 <sup>*#</sup>                   | 3 IST 242 <sup>*#</sup>                    | 3         |
| General Education Selection               | 3 SRA 211 <sup>*</sup>                     | 3         |
| ENGL 15, 15S, 30T, or ESL 15 <sup>‡</sup> | 3 General Education Selection <sup>*</sup> | 3         |
| <b>15</b>                                 |  | <b>16</b> |

### Second Year

| Fall                        | Credits Spring                   | Credits |
|-----------------------------|----------------------------------|---------|
| CYBER 262 <sup>*</sup>      | 3 IST 210 <sup>*#</sup>          | 3       |
| IST 220 <sup>*#</sup>       | 3 SRA 231 <sup>*</sup>           | 3       |
| IST 261 <sup>*</sup>        | 3 ENGL 202C or 202D <sup>‡</sup> | 3       |
| SRA 221 or 221 <sup>*</sup> | 3 General Education Selection    | 3       |

|                               |                                 |                       |                |
|-------------------------------|---------------------------------|-----------------------|----------------|
| STAT 200*†#                   | 4 General Education Selection   | 3                     |                |
|                               | <b>16</b>                       | <b>15</b>             |                |
| <b>Third Year</b>             |                                 |                       |                |
| <b>Fall</b>                   | <b>Credits Spring</b>           | <b>Credits Summer</b> | <b>Credits</b> |
| CYBER 362*                    | 3 CYBER 342W*                   | 3 IST 495*            | 1              |
| IST 230*                      | 3 CYBER 366*                    | 3                     |                |
| SRA 365*                      | 3 Application Focus Selection 1 | 3                     |                |
| SRA 311*                      | 3 General Education Selection   | 3                     |                |
| General Education Selection   | 3 Elective                      | 3                     |                |
|                               | <b>15</b>                       | <b>15</b>             | <b>1</b>       |
| <b>Fourth Year</b>            |                                 |                       |                |
| <b>Fall</b>                   | <b>Credits Spring</b>           | <b>Credits</b>        |                |
| IST 432*                      | 3 CYBER 440*                    | 3                     |                |
| IST 451 or 451*               | 3 IST 454 or 454*               | 3                     |                |
| Application Focus Selection 2 | 3 IST 456 or 456*               | 3                     |                |
| General Education Selection   | 3 Application Focus Selection 3 | 3                     |                |
| General Education Selection   | 3 General Education Selection   | 3                     |                |
|                               | <b>15</b>                       | <b>15</b>             |                |
| <b>Total Credits 123</b>      |                                 |                       |                |

\* 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 Cultural Diversity 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.

General Education includes Foundations (GWS and GQ), Knowledge Domains (GHW, GN, GA, GH, GS) and Integrative Studies (Inter-domain) requirements. N or Q (Honors) is the suffix at the end of a course number used to help identify an Inter-domain course, but the inter-domain attribute is used to fill audit requirements. Foundations courses (GWS and GQ) require a grade of 'C' or better.

#### Advising Notes:

Students in the Cybersecurity Analytics and Operations (CAOCA\_BS) major are expected to complete 24 credits of upper level course work in the major and the senior capstone course (CYBER 440) at Penn State Harrisburg. This is in compliance with Faculty Senate Policy 83-80.5.

CYBER 440 should be taken during the final semester of academic progress.

IST 495 Internship: Supervised work experience where the student is employed in a position related to the student's major. An internship is typically completed the summer after the junior year, but it may be completed at any time during the student's academic career. Students are required to complete one internship but may complete three. A grade of C or better must be earned in this course. For more information, contact your academic adviser.

Students who plan to apply for the National Security Agency Certifications must complete all required courses. No substitutions or transfer credits are permitted.

Students pick one of the five tracks below or create a custom 3-course application focus. Students must pick three (3) credits at the 400 level. All nine (9) credits must be in the same application focus area. It is recommended that students use the application focus area list to select a course that meets a General Education requirement (GS/GHW) and serves as a prerequisite for more advanced coursework within the application focus. This course does not count as part of the 9 credits of application focus sequence.

#### Application Development

| Code    | Title  | Credits |
|---------|--|---------|
| IST 311 | Object-Oriented Design and Software Applications | 3       |
| IST 331 | Foundations of Human-Centered Design             | 3       |
| IST 361 | Application Development Design Studio II         | 3       |
| IST 402 | Emerging Issues and Technologies                 | 3       |
| IST 411 | Distributed-Object Computing                     | 3       |
| IST 412 | The Engineering of Complex Software Systems      | 3       |

#### Business Administration (Harrisburg Students Only)

The Business Administration focus is for students who desire the opportunity to develop and apply skills relevant to businesses and other organizations. Included in this focus area are courses in the core business disciplines of accounting, finance, management, and marketing. Select at least nine (9) credits from below, with at least three (3) credits at the 400 level.

| Code                 | Title  | Credits |
|----------------------|--|---------|
| ACCTG 211            | Financial and Managerial Accounting for Decision Making  | 4       |
| ECON 102 or ECON 104 | Introductory Microeconomic Analysis and Policy<br>Introductory Macroeconomic Analysis and Policy | 3       |
| MIS 250              | Introduction to Problem Solving with Spreadsheet Analysis and Information Systems Management     | 3       |
| BA 243               | Social, Legal, and Ethical Environment of Business   | 4       |
| BA 364Y              | International Business and Society   | 3       |

The following courses may require prerequisites:

| Code    | Title                              | Credits |
|---------|------------------------------------|---------|
| MIS 301 | Business Analytics                 | 3       |
| MIS 390 | Foundations of Information Systems | 3       |



|          |  |   |
|----------|--|---|
| MGMT 301 | Basic Management Concepts                | 3 |
| FIN 301  | Corporation Finance                      | 3 |
| MKTG 301 | Principles of Marketing                  | 3 |
| SCM 301  | Supply Chain Management                  | 3 |
| MGMT 418 | Project Planning and Resource Management | 3 |
| MGMT 420 | Negotiation and Conflict Management      | 3 |
| MGMT 433 | Leadership and Team Building             | 3 |
| MIS 420  | Business Process Management              | 3 |

### Economics

The Economics focus is for students who have an interest in pursuing cybersecurity careers in the financial services sector or government. Designed to help students understand today's financial and economic environments, this focus highlights the importance of translating the financial and economic impact of cybersecurity activities to effectively manage any program.

| Code     | Title                                     | Credits |
|----------|---|---------|
| BLAW 243 | Legal Environment of Business             | 3       |
| BA 301   | Finance                                   | 3       |
| ECON 302 | Intermediate Microeconomic Analysis       | 3       |
| ECON 402 | Decision Making and Strategy in Economics | 3       |
| ECON 445 | Health Economics                          | 3       |
| ECON 470 | International Trade and Finance           | 3       |
| FIN 301  | Corporation Finance                       | 3       |
| HPA 445  | Health Economics                          | 3       |
| PLSC 412 | International Political Economy           | 3       |
| PLSC 481 | Global Political Economy                  | 3       |

### Enterprise Technology

| Code     | Title  | Credits |
|----------|--|---------|
| IST 301  | Information and Organizations                                  | 3       |
| IST 302  | IT Project Management  | 3       |
| IST 420  | Fundamentals of Systems and Enterprise Integration             | 3       |
| IST 421  | Advanced Enterprise Integration: Technologies and Applications | 3       |
| IST 423  | Enterprise Information Management and Storage Architecture     | 3       |
| ETI 300W | Development and Documentation of Enterprise Web                | 3       |
| ETI 435  | Enterprise Analytics   | 3       |
| ETI 461  | Database Management and Administration                         | 3       |
| ETI 463  | Distributed Database Management Systems                        | 3       |

### Geopolitics

Understanding the geopolitical landscape is key to understanding and modeling cyberthreats from nation-states and other threat actors. The Geopolitics focus is for students who have an interest in pursuing cybersecurity careers in government or related consulting sectors.

| Code     | Title   | Credits |
|----------|---|---------|
| GEOG 160 | Mapping Our Changing World  | 3       |
| GEOG 260 | Geographic Information in a Changing World: Introduction to GIScience | 3       |
| IB 440   | Globalization and Its Implications                                    | 3       |
| PLSC 14  | International Relations   | 3       |

|                        |  |   |
|------------------------|--|---|
| PLSC 461               | Politics of the European Union             | 3 |
| PLSC 467               | International Relations of the Middle East | 3 |
| PLSC 481               | Global Political Economy                   | 3 |
| GEOG 333               | Human Dimensions of Natural Hazards        | 3 |
| GEOG 363               | Geographic Information Systems             | 3 |
| AFR/PLSC 440           | Globalization and Its Implications         | 3 |
| SRA 450                | Cyber-Crime and Cyber-Warfare              | 3 |
| SRA 480                | Crisis Informatics                         | 3 |
| ARMY, AIR, NAVSC (any) |  | 3 |

### Health Care

Hospitals, pharmaceutical companies, and government agencies are just a few of the sectors that have strict requirements around protecting health care data. The Health Care focus is for students who have an interest in pursuing cybersecurity careers in a health care environment. Understanding how information is managed in these environments will help students thrive in a health care-related career.

| Code        | Title   | Credits |
|-------------|---|---------|
| HPA 101     | Introduction to Health Services Organization  | 3       |
| BBH 101     | Introduction to Biobehavioral Health  | 3       |
| ECON 445    | Health Economics  | 3       |
| HPA 332     | Health Systems Management   | 3       |
| HPA 445     | Health Economics  | 3       |
| HPA 450     | Healthcare Policies and Politics  | 3       |
| NURS 357    | Introduction to Nursing Informatics (offered at Commonwealth and World Campuses; not at University Park)          | 3       |
| HPA/BBH 440 | Principles of Epidemiology  | 3       |
| HPA 470     | Health Care Information Management  | 3       |
| NURS 458    | Ethical Challenges in Healthcare Informatics (offered at Commonwealth and World Campuses; not at University Park) | 3       |

### Law and Policy

Cybersecurity careers in law enforcement require knowledge of laws and policies focused on the handling of evidence related to digital forensics and monitoring. Individuals in the private sector and government agencies must also understand and adhere to these topics as they involve cybersecurity. The Law and Policy focus is for students who want to understand law and policy as they relate to digital data.

| Code                | Title   | Credits |
|---------------------|---|---------|
| COMM 180            | Survey of Electronic Media and Telecommunications     | 3       |
| COMM 404            | Telecommunications Law                                | 3       |
| CRIM/CRIMJ 113      | Introduction to Law                                   | 3       |
| PLSC 14             | International Relations                               | 3       |
| PLSC 140            | Contemporary Controversies in International Relations | 3       |
| PLSC 438            | National Security Policies                            | 3       |
| PLSC 442            | American Foreign Policy                               | 3       |
| PLSC/STS 460        | Science, Technology, and Public Policy                | 3       |
| PLSC 467            | International Relations of the Middle East            | 3       |
| CRIM/CRIMJ/ SOC 467 | Law and Society                                       | 3       |
| HLS/PADM 401        | (offered by Harrisburg and World Campus only)         | 3       |

|                |  |   |
|----------------|--|---|
| PLSC/CRIMJ 439 | The Politics of Terrorism  | 3 |
| PLSC 487       | International Law and Organizations (not offered at University Park) | 3 |

### Custom Application Focus

There is an option for a student to create a custom 4-course application focus sequence. It must be a coherent sequence of courses that provides context for the student in terms of cybersecurity content. It should contain three credits of GS coursework and must contain six credits of 400-level coursework. It must be selected in consultation with a teaching CYBER faculty member and an academic adviser.

## Career Paths

Cybersecurity blends the technical expertise needed to analyze security issues and create cyberdefense strategies with the interpersonal skills needed to communicate threats to a variety of audiences. The program prepares students to meet the growing need for professionals who can defend against threats to digital information and assets. 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, a Cybersecurity Analytics and Operations degree allows students to pursue opportunities as cybersecurity analysts, cyberthreat advisers, penetration testers, and a number of other unique careers in fields such as defense, government, and business.

MORE INFORMATION ABOUT POTENTIAL CAREER OPTIONS FOR GRADUATES OF THE CYBERSECURITY ANALYTICS AND OPERATIONS PROGRAM (<https://www.ist.psu.edu/current/careers/development/process/path/>)

## Contact

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## University Park

COLLEGE OF INFORMATION SCIENCES AND TECHNOLOGY  
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## World Campus

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<https://www.worldcampus.psu.edu/degrees-and-certificates/penn-state-online-cybersecurity-analytics-and-operations-bachelor-of-science-degree> (<https://www.worldcampus.psu.edu/degrees-and-certificates/penn-state-online-cybersecurity-analytics-and-operations-bachelor-of-science-degree/>)

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