

# SECURITY AND RISK ANALYSIS, CERTIFICATE

Requirements for an undergraduate certificate may be completed at any campus location offering the specified courses for the certificate.

## Program Description

Our society operates through information and communication technology-based infrastructures from the Internet to cell phones to organization-specific information systems across all sectors of our economy. We use these infrastructures to communicate; to conduct business; to facilitate relationships between governments; to analyze data for trends in business, social, and international settings; and to use the outputs to make decisions in countless venues. These infrastructures hold data which holds clues to how we interact with society, government, and the economy. The SRA certificate provides introductory curriculum that covers information systems, information assurance (both digital and physical security) and intelligence analysis.

## What is Security and Risk Analysis?

Security and risk analysis is a field that explores the integrated processes conducted to provide decision-makers with the information needed to understand factors that can negatively influence operations and outcomes, and make informed judgments concerning the extent of actions needed to reduce vulnerabilities, protect resources, and optimize investments. Security and risk analysis is a field of practice with two blended concentration areas: 1) security, which seeks to identify, understand, and analyze critical local, national and international security issues, and 2) risk, which includes risk assessment, risk characterization, risk communication, risk management, and the formulation of risk policy. In practice, the issues and processes for conducting of security and risk analytics are neither separate nor sequential. To be effective, the issues of security and risk must be addressed concurrently and synergistically.

## You Might Like This Program If...

- You want to protect people, information, and assets from manmade and natural threats.
- You want to understand the role of data in protecting individuals, organizations and our nation.
- You are mission-oriented, a good critical thinker and wish to put your problem-solving skills to work to make the world a safer place.
- You want to make informed strategic decisions that help to defend critical infrastructures that support our daily lives.

## Program Requirements

To earn an undergraduate certificate in Security and Risk Analysis, a minimum of 15 credits is required.

A grade of "C" or higher is required in all courses for the certificate; no course substitutions are permitted. Courses taken more than 10 years ago will not apply automatically towards completion of the certificate but instead will require review by the academic unit.

Code	Title	Credits
<b>Prescribed Courses</b>		
<i>Prescribed Courses: Require a grade of C or better</i>		
IST 110	Information, People and Technology	3

SRA 111	Introduction to Security and Risk Analysis	3
SRA 211	Threat of Terrorism and Crime	3
SRA 221	Overview of Information Security	3
Select one of the following:		3
CMPSC 101	Introduction to Programming	
CMPSC 121	Introduction to Programming Techniques	
IST 140	Introduction to Application Development	

## Certificate 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 to address security and risk problems within the individual, community, organizational and national security dimensions.
  - Identify security and risk problem terms of the individual, community, organizational and national security levels of analysis
  - 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
  - Identify and recognize countermeasure application strategies to address security needs to include architectures, processes, components, or programs to meet desired needs at varying levels of analysis (e.g., individual, community, organizational and/or national security)
- **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
  - 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:** 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

## 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/>)

### University Park

#### Undergraduate Academic Advising Center

E103 Westgate Building  
University Park, PA 16802  
814-865-8947  
[advising@ist.psu.edu](mailto:advising@ist.psu.edu)

### World Campus

#### Undergraduate Academic Advising

301 Outreach Building  
University Park, PA 16802  
814-863-3283  
[advising@outreach.psu.edu](mailto:advising@outreach.psu.edu)

### Schuylkill

#### Academic Advising Office

**Academic Affairs**  
200 University Drive  
Schuylkill Haven, PA 17972  
570-385-6111  
[sl-advising@psu.edu](mailto:sl-advising@psu.edu)

## Career Paths

The Security and Risk Analysis program responds to the expanding need for a highly trained analytic workforce to address a wide range of security and risk domains including national/homeland security, emergency and disaster management, law and crime, as well as enterprise risk management. The SRA degree prepares students to be future leaders to address the current and emerging security and risk challenges that face individuals, organizations and our nation. IST's Office of Career Solutions helps students navigate internship and career development through coaching, workshops, interview preparation, resume reviews, career fairs, job postings, and networking opportunities.

### Careers

Security and Risk Analysis students may specialize in risk domains ranging from national security to community emergency preparedness and response. Because our courses blend technical knowledge with skills in communication and business, a Security and Risk Analysis degree allows students to pursue opportunities in intelligence, counterterrorism, computer forensics, and a number of other growing careers. SRA graduates work in a variety of fields, including defense, business,

and emergency management; and many graduates go on to work for government intelligence agencies like the CIA, FBI, and NSA.

MORE INFORMATION ABOUT POTENTIAL CAREER OPTIONS FOR GRADUATES WITH A CERTIFICATE IN SECURITY AND RISK ANALYSIS (<https://ist.psu.edu/current/careers/development/process/path/>)

### Opportunities for Graduate Studies

With a focus on problem solving, critical thinking and the presentation of analytic findings, the SRA program is a great stepping-stone to graduate education and higher learning. Many SRA graduates will go on to pursue graduate degrees in fields like law, cyber security, and data science. The foundational skills obtained in the SRA degree directly apply to graduate education.

## Contact

### University Park

COLLEGE OF INFORMATION SCIENCES AND TECHNOLOGY  
411 Eric J. Barron Innovation Hub Building  
State College, PA 16801  
814-865-3528

### World Campus

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<https://www.worldcampus.psu.edu/degrees-and-certificates/penn-state-online-security-and-risk-analysis-undergraduate-certificate> (<https://www.worldcampus.psu.edu/degrees-and-certificates/penn-state-online-security-and-risk-analysis-undergraduate-certificate/>)

### Schuylkill

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