



Security and Risk Analysis

SOCIAL FACTORS AND RISK (SFR)

This option includes the legal, regulatory, ethical, and other theories associated with security and risk. Such an examination is focused on understanding the social factors and causes that are linked to transnational terrorism, investigations and litigation involved in business, and other security-related environments.

1. What campuses offer this option? Not all options are available at all campuses, so be sure to [check for availability](#) at your campus.

2. What is the focus of this option in terms of specific knowledge and skills?

The SFR option is designed as a conversation about the interaction between the social, ethical, organizational, legal, and regulatory elements of security and risk analysis. This option provides students with the skills and knowledge to understand the human factors and causes that are linked to transnational terrorism, criminal investigations and litigation, risks assessment and control involved in business, and other security-related environments.

Specific skills for studying in this option include:

- Understanding assessment and mitigation of security vulnerabilities for people, organizations, industry sectors, and the nation (SRA 311).
- Understanding how society can balance the interests of individuals, businesses, and government in ways that protect information privacy effectively (SRA 472).
- (SRA 471) Informatics, Risk, and the Post-Modern World (course is presently being developed).
- Exploring the economic, cultural, legal, ethical, and social issues in the areas of privacy, intellectual property, censorship, and telecommunications policy (IST 432).

3. a. How do the courses in this option integrate with each other?

The courses—SRA 311, SRA 471, SRA 472, and IST 431—expose students to a multidisciplinary examination of social factors and risk. These courses seek to contribute to a better understanding of the many issues that play a role in SRA and contribute to the social analysis of issues involving SRA, and provide a variety of tools and concepts that can be more fruitfully engaged in SRA-related contexts.

b. What other Penn State courses would you recommend to supplement this option?

- Support-of-option courses could be related to the student's area of IT application such as business, communication, and government.
- Additional courses in organizational behavior, economics, political science, communications, psychology, and/or sociology could be used to expand the skills needed to analyze the social impacts of emerging technologies.
- Students also could take additional 300- and 400-level IST courses to enhance their knowledge of advanced technologies.

4. Realizing that students majoring in SRA will be prepared to work in many different areas, what are specific examples of the activities /work assignments that best illustrate this option?

Listed below are three examples of topics from SRA 472 (Integration of Privacy and Security) to demonstrate the vast activities and work assignments found within the SFR option:

- How can you figure out whether a Web site is trustworthy? How can you figure out whether it is safe to download and install a piece of software?
- How can you integrate social theories of trust in the software development process?
- What does privacy mean to you? How could Web site privacy policies be made more useful?

5. What related or additional information should students focus on outside of classes?

Resources that best describe the concerns this option addresses include:

- *Business Week*
- *Wall Street Journal*
- *New York Times* Technology section

6. Recommended Web sites to supplement the SFR option and the IST major:

- *Information Week*: www.Informationweek.com
- *Privacy Journal*: www.Privacyjournal.net
- Electronic Frontier Foundation (EFF): www.eff.org/
- Electronic Privacy Information Center (EPIC): www.epic.org/
- Foundation for Information Policy Research (FIPR): www.fipr.org/
- International Association of Privacy Professionals (IAPP): www.privacyassociation.org/
- ZDNet: www.zdnet.com/
- CIO.com: www.cio.com/
- Computer Security Institute: www.gocsi.com/
- Information Systems Audit and Control Association: www.isaca.org/

7. What are typical job descriptions for Security and Risk Analysis graduates? Please note:

The following is a brief list containing some of the career positions a graduate in SRA may encounter. It is not intended to serve as a comprehensive career guide, but rather to give students a sense of the general pathways to which this option may lead. Graduates from IST successfully apply their broad-based technology background in myriad professional settings. Some IST graduates also choose to continue their studies in graduate or professional schools.

- **Business Intelligence Consultant/Analyst:** Responsibilities include: Work with business clients to understand their business and analytical requirements, and produce functional specification documents; design and implement solutions (e.g. Customer Insight) to enable our clients to maximize the learning and insight they can derive from their varied sources of customer data; selection and implementation of tools, technologies, and applications to maintain state-of-the-art data management and decision-making capabilities for our clients; assist in planning and managing a project; deliver information effectively to clients through documentation and presentations; build and maintain client relationships.
- **Counter-Intelligence Threat Analyst:** Counter-intelligence (CI) analysts identify, monitor, and analyze the efforts of foreign intelligence entities against U.S. persons, activities, and interests, including the threats posed by emerging technologies to U.S. operations and interests. Their efforts support U.S. policymakers and provide tactical analysis and advice for clandestine operations by producing strategic analysis. CI analysts also produce a range of current and longer-term intelligence products and brief key U.S.

policymakers. Agency analysts are encouraged to maintain and broaden their professional ties through academic study, contacts, and attendance at professional meetings. They also may choose to pursue additional studies in fields relevant to their areas of responsibility. Opportunities exist for foreign and domestic travel, language training, analytic and management training, and assignments to other offices in the Agency and throughout the U.S. Government.

- **Counter-Terrorism Analyst:** Counter-terrorism analysts assess developments related to terrorism worldwide in support of U.S. policymakers. They monitor and assess the leadership, motivations, plans, and intentions of foreign terrorist groups and their state and non-state sponsors. Counter-terrorism analysts also produce a range of current and longer-term intelligence products, brief key U.S. policy-makers and provide tactical analytic support to law enforcement and intelligence operations. Agency analysts are encouraged to maintain and broaden their professional ties through academic study, contacts, and attendance at professional meetings. They also may choose to pursue additional studies in fields relevant to their areas of responsibility. Opportunities exist for foreign travel, language training, analytic and management training, and assignments in other offices in the Agency and throughout the U.S. Government.
- **Cyber Intelligence Analyst:** This position requires intelligence analysis and production tasks related to counter-intelligence and/or computer investigations and operations. Experience in counter-terrorism and/or counter-intelligence analysis is essential. Excellent communication skills, both verbal and written, are critical. Experience in providing analytical support for cyber investigations, working with link analysis tools, analyzing network logs, and interacting with databases is highly desirable. A basic knowledge of computer and network security principles is important. A Top-Secret security clearance and bachelors degree are required. Locations are worldwide.
- **Intelligence Analyst:** An intelligence analyst is primarily responsible for supervising, coordinating, and participating in the analysis, processing and distribution of strategic and tactical intelligence. Some of the duties may include: preparing all-source intelligence products to support the combat commander; assisting in establishing and maintaining systematic, cross-referenced intelligence records and files; receiving and processing incoming reports and messages; assisting in determining the significance and reliability of incoming information; assisting in the analysis and evaluation of intelligence holdings to determine changes in enemy capabilities, vulnerabilities, and probable courses of action; assembling and proofreading intelligence reports and assisting in consolidating them into Army intelligence; storing and retrieving intelligence data using computers.
- **Intelligence Operations:** Comprised of various positions in the intelligence field, intelligence operations are concerned with the development of collection plans, the organization of activities for the collection of raw intelligence data in a variety of subject-matter areas, and the dissemination of finished intelligence reports. Those involved in intelligence operations apply knowledge of the organization and operations of the entire intelligence function to a variety of different kinds of tasks and functions designed to collect and disseminate information.
- **Intelligence Operations Specialist:** The approved title for positions in the field of intelligence operations is intelligence operations specialist. Intelligence operations specialists apply the knowledge of a professional discipline such as international

relations, current history, military science, or political science and knowledge of the operations and resources of the organizations that make up the intelligence community to a subject-matter specialty in the field of intelligence operations. Examples of such subject-matter specialties are collection techniques for electronics, intelligence, and liaison activities. U.S. Office of Personnel Management 8 Intelligence Series, GS-0132 TS-28 June 1960, TS-27 April 1960 Intelligence Operations Specialists determine the need for and write collection manuals and guides, edit requests for intelligence data, perform liaison functions within the intelligence community, and determine the distribution of raw intelligence data and finished intelligence reports.

In all these activities, intelligence operations specialists apply knowledge of the organization and methods of collecting intelligence data to the resources and interests of the intelligence community, utilizing imagination in relating the collection and dissemination processes to the needs of research. For example, when an intelligence research specialist requests a specific piece of information he may do so with little regard for the relative availability of the information or of the methods by which it may be acquired. The intelligence operations specialist has knowledge of the resources of the entire intelligence community. He or she considers whether another intelligence organization or an outside source has the required data, whether other intelligence research specialists in the same or other organizations have need for the same or related data, how they may best be acquired and which organization has the best collection facilities for their acquisition. He or she also considers, with the research specialist, the relative importance of the requested information to the research report versus the cost of acquisition, both monetarily and in terms of compromising sources of information. He assures the fullest exploitation of all data received, by referring it to all interested members of the intelligence community. Intelligence operations specialists exercise their functions through interactions with other people; they are generalists who are primarily engaged in facilitating the entire intelligence process.

- **Intelligence Research Specialist:** Intelligence research specialists apply a basic knowledge of a professional discipline, the principles and techniques of inductive and deductive reasoning, and subject-matter knowledge of either a geographical area or a functional area to the production of finished intelligence reports. To accomplish this, they receive and review data from various documents, reference books, periodicals, newspapers, reports, photographs, and other forms of communication. They analyze and evaluate the significance and validity of such data and provide for its storage and maintenance. They exploit (as used in the intelligence field, this means to acquire the maximum intelligence use out of raw data.), interpret, and project existing data to fill gaps in information, request the collection of data to fill gaps in knowledge, and review and evaluate finished intelligence reports from the point of view of their specific subject-matter fields. In addition, some intelligence research specialists (1) provide guidance to officials stationed or traveling overseas, and to others in a position to collect raw data, as to type and significance of information needed; (2) interview (debrief) returning foreign travelers to obtain intelligence data; and (3) conduct briefing sessions on specific topics for policy and decision makers who are in need of specific intelligence information.
- **Intelligence Specialists:** Intelligence specialists analyze intelligence data. They break down information to determine its usefulness in military planning. From this intelligence data, they prepare materials that describe in detail the features of strategic and tactical areas throughout the world. Duties performed by intelligence specialists include analyzing intelligence information; identifying and producing intelligence from raw information; assembling and analyzing multi-source operational intelligence; preparing

and presenting intelligence briefings; preparing planning materials for photographic reconnaissance missions; analyzing the results; preparing reports; preparing graphics, overlays and photo/map composites; plotting imagery data using maps and charts; providing input to and receiving data from computerized intelligence systems ashore and afloat; maintaining intelligence databases, libraries, and files.