

# CYBERSECURITY ANALYTICS AND OPERATIONS, B.S. (INFORMATION SCIENCES AND TECHNOLOGY)

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**Begin Campus:** Any Penn State Campus

**End Campus:** University Park

## Program Learning Objectives

- **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.
  - **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.
  - **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.
  - **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.
  - **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.