

Cybersecurity - M.S.

Curriculum

The Cybersecurity Master of Science degree program builds cogently on the body of knowledge associated with the protection of networks, communication channels and information, and incorporates a set of core competencies in both technology and business as they relate to planning, implementing and managing system- and enterprise-level security. This program is targeted for students who have bachelor's degrees in information technology, computer science, and network and software engineering, as well as others who have earned bachelor's degrees in fields outside these areas but need the graduate-level degree to advance professionally. All students must complete a capstone project.

Upon completion of the program, graduates are expected to:

- Research, establish and apply strategies and solutions that demonstrate an understanding of security foundations and the practical applications in the information security/assurance field.
- Integrate information security solutions through the alignment of appropriate security methodologies to different security situations.
- Develop system security contingency plans and disaster recovery procedures.
- Propose and test policies and procedures to ensure information systems reliability and availability and the prevention of unauthorized access.
- Effectively communicate information security assessments, plans and actions to all stakeholders, both technical and nontechnical.
- Assess and summarize the legal standards, laws and regulations related to information security/assurance in the global community.

This program is a 12-course degree with a 6-course core and 5-course focus area. The final program requirement is a 3.0 credit capstone research project.

ISA5005 Network Fundamentals (offered online only) or an approved equivalent is a requirement for this program. Students who do not have this course or an approved equivalent within their undergraduate program, or who transferred in, will need to complete this foundation course prior to registering for core and focus classes.

Cybersecurity

Master of Science

Foundation Course

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| ISA5005 | Network Fundamentals * | 3 |
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Core Courses

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| ISA5020 | Foundations of Information Security Management | 3 |
| ISA5030 | Legal and Ethical Principles in IT | 3 |
| ISA5040 | Network Security and Cryptography | 3 |
| ISA5050 | Digital/Computer Forensics and Investigation | 3 |
| MATH5100 | Statistical Methods | 3 |
| RSCH5700 | Research and Inquiry | 3 |

Required Focus

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| ISA5085 | Principles of Programming | 3 |
| ISA6010 | Software Security Testing | 3 |
| ISA6020 | Securing Virtualized and Cloud Infrastructures | 3 |
| ISA6030 | Hacking Countermeasures and Techniques | 3 |
| ISA6040 | Advanced Network Intrusion Detection and Analysis | 3 |

Career Capstone Course

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| ISA6090 | Information Security & Assurance Capstone Research Project | 3 |
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Total Credits **36.0-39.0**

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ISA5005 Network Fundamentals is only offered online.

Admissions Requirements

To be considered for admission into any JWU graduate degree program offered on campus, the following documents must be submitted:

1. A completed graduate application for admission
2. Official or certified transcripts/mark sheets from all institutions attended, including proof of bachelor's degree and master's degree (if applicable) conferral. Transcripts issued to a student are not considered official unless in an unopened university envelope. When a graduate program application is submitted prior to completing requirements for the

bachelor's degree, Graduate Admissions will consider the application and, if admissible, will offer an acceptance pending submission of final transcript verifying bachelor degree conferral. Without such verification, students may not be allowed to register for the current semester or continue enrollment, and will be in jeopardy of losing their academic status with the university.

3. Statement of Purpose: an essay explaining your motivation, aptitude and goals related to graduate-level study
4. Letters of recommendation. Graduate programs at JWU require two letters of recommendation. Recommendations should be from individuals qualified to attest to the applicant's potential for success at the graduate level of study.
5. Current résumé or CV
6. Candidates for the M.S. in Cybersecurity program at JWU must have a minimum 3.0 grade point average. A bachelor's degree in any major will be considered for admission, although an IT-related major is preferred.