

**University of Southern California**  
**VITERBI SCHOOL OF ENGINEERING**

Master of Science in Cyber Security Engineering  
*Program Learning Objectives*

The Master of Science in Cyber Security Engineering degree focuses on the fundamentals of developing, engineering, and operating secure information systems. Our curriculum fosters an understanding on how to develop a security policy and how policy drives technology decisions. Students will be well versed in the challenges and problems of secure operating systems, secure applications, secure networking, use of cryptography, and key management.

This specialized degree is intended for graduate students who desire to obtain jobs in which computer network operations knowledge and skills are required, or to continue an education path toward a doctorate with a focus on information security. It is also for individuals in degree programs or job fields that have responsibility for information security who wish to advance their knowledge and skills.

- Upon completion of the USC Viterbi School of Engineering Master of Science in Cyber Security Engineering, students will demonstrate broad understanding of trusted systems and standards, and verifiable protection of trustworthy high assurance security addressing advance persistent threats including software subversion. Students will be able to defend systems from large-scale attacks that have the potential to cause significant compromise to the safety, security, and privacy of individuals and society at large.
- Upon completion of the USC Master of Science in Cyber Security Engineering, students will have the ability to apply critical principles and practices pertinent to cyber security and information protection in their employment practice.
- Upon completion of the USC Master of Science in Cyber Security Engineering, students will be able to work in the diverse global contexts to apply universally respectful practices pertinent to security and privacy.
- Students enrolled in the Master of Science in Cyber Security Engineering will demonstrate an understanding of contemporary engineering design principles and associated practices relevant to threats to information systems as well as technical and procedural approaches to mitigating the threat. They will understand the technical concepts of secure system design and development, and mechanisms for building security services and risk management. They will implement these practices under guidance of Data Science faculty members in preparation for employment in the Cyber Security and Information Assurance industries.