

Information Technology— Information Security Certificate

Certificate

Information Technology Program Cluster

Center for Agriscience and Technologies

Program offered at Madison Campuses

For information call: (608) 246-6800 or
(800) 322-6282 Ext. 6800

About the Certificate

The IT Information Security Certificate program provides comprehensive instruction for networking students and professionals who want to expand their skills in computer security. Students survey issues in IT security awareness, data confidentiality, network security, and legal and ethical issues associated with computer system security.

This certificate provides hands-on training in designing, planning and executing a vulnerability assessment on a computer network. Once the assessment is completed, students design a security plan to protect the network from threats. Students will be introduced to several firewall technologies including packet filtering, proxy firewalls, application gateways and circuit gateways. In addition, the students will be trained in properly securing a network using Virtual Private Networks (VPNs).

The IT Information Security Certificate prepares the student to test for two of the CISCO Certified Security Professional (CCSP) exams, Security+ certification and Certified Information System Security Professional (CISSP) certification.

Unique Requirements for Admission

Student must have a CCNA certification OR at least two years of practical experience in the Networking field, specifically with Cisco routing and hardware essentials experience. Student also must have working knowledge of the Linux operating system. Second year Network Specialist program students may be considered.

Curriculum

FIRST YEAR		Credits	Hrs/week Lec-Lab
First Semester			
10-150-162	Computer Systems Security *	3	2-2
10-150-164	Penetration Testing/Network Defense *	3	2-2
10-150-193	Network Security Design **	3	2-2
10-150-194	Firewall/VPN Technologies **	3	2-2
10-150-196	Intrusion Detection Systems **	3	2-2
Total		15	

*Offered fall semester only

**Offered spring semester only

Note: All Information Technology courses require a grade of C or better in order to receive the certificate.

Certificate Application Process

To apply, see: Apply Online (on the Madison College website). [Create an ApplyWeb account](#) and follow the [instructions](#) to complete the [Online Certificate Application](#) before the [application deadline](#). Submit the \$15 non-refundable fee (payable by credit card, debit card or electronic check) with your application. Applicants may submit more than one certificate application per term using the Online Certificate Application; the same fees apply for each additional application.

Unique Requirements for Completion

The certificate will be awarded upon completion of the requirements with a minimum of a 2.0 grade average and no course grade lower than a C. The certificate will be awarded when completion of all requirements is verified after the semester the last course has been completed.



Courses

10-150-162 Computer Systems Security 3 credits
Introduces the basics of network security. The student is introduced to computer network vulnerabilities and threats and how to safeguard computer networks from those vulnerabilities and threats. This course exposes the student to network security planning, network security technology, network security organization, and the legal and ethical issues associated with network security. In this class, students learn the skills necessary for Security+ certification. Prerequisite: grade of C or better in 10-150-160, 10-154-184 and one of the following 10-150-101 or 10-150-170 or acceptance into certificate.

**10-150-164 Penetration Testing/
Network Defense 3 credits**
Introduces the network security specialist to the various methodologies for attacking a network. The student is introduced to the concepts, principles and techniques, supplemented by hands-on exercises for attacking and disabling a network. These methodologies are presented within the context of properly securing the network. The course emphasizes network attack methodologies with the emphasis on student use of network attack techniques and tools. Prerequisite: grade of C or better in 10-150-162.

10-150-193 Network Security Design 3 credits
This course affords the network security specialist the opportunity to design a secure network in a team environment using the skills learned from the prerequisite classes. The student must demonstrate the ability to design, plan and execute an infrastructure that represents the services offered by a common business or organization. The student will research their part of the design and must prepare written document including notes, diagrams, references, and implementation instructions of their part of the total design. Prerequisite: 10-150-164 and completion or concurrent enrollment in 10-150-196.

10-150-194 Firewall/PVN Technologies 3 credits
Introduces the network security specialist to the various methodologies for defending a network. Students are introduced to the concepts, principles, types and topologies of firewalls to include packet filtering, proxy firewalls, application gateways, circuit gateways and stateful inspection. Students also learn the skills necessary for one of the CISCO Certified Security Professional (CCSP) certification exams. Prerequisite: grade of C or better in 10-150-172 CCNA3&4: Switching and WAN Access or consent of instructor; and acceptance into certificate.

10-150-196 Intrusion Detection Systems 3 credits
This course introduces the basics of Intrusion Detection and network defense strategies. The student will be introduced to the tools and techniques used to identify network threats and recommended ways to mitigate those threats. The student must demonstrate the ability to plan, design, and build a network IDS that fulfills the security needs of a common business or organization. Prerequisite: 10-150-164 and 10-150-194 or consent of instructor.

Career Potential:

- Information Security Technician
- Cyber Security Professional

More detailed and updated information on this program may be available at: madisoncollege.org. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

Madison Area Technical College provides equal opportunity in education and employment.

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