IT CYBERSECURITY SPECIALIST

Associate in Applied Science (AAS)
Program Code: 10-151-2
Total Credits: 60

Graduates of this program understand the security measures needed to safeguard an organization's electronic files and computer networking infrastructure. Students will be involved in planning, implementing, and monitoring information technology security systems. Through hands-on projects, you will learn ethical hacking techniques in order to fully understand network vulnerabilities. You will also learn effective ways to implement intrusion detection systems to mitigate security risks. Includes demonstration of the use of computer forensics to help track down and stop potential information security breaches.

Mid-State's IT Cybersecurity Specialist program is validated as a Program of Study by the National Security Agency (NSA).

Estimated tuition and fees: mstc.edu/programcosts

ACADEMIC ADVISOR
To schedule an appointment with an academic advisor, call 715.422.5300. Academic advisors will travel to other campuses as necessary to accommodate student needs. For more information about advising, visit **mstc.edu/advising**.

CHECKLIST:
This section will be completed when meeting with your academic advisor.

- ❑ FAFSA (www.fafsa.gov)
- ❑ Financial Aid Form(s)

  Form(s): _____
- ❑ Follow-Up Appointment:

  Where: _____

  When: _____

  With: _____
- ❑ Official Transcripts
  Mid-State Technical College
  Student Services Assistant
  1001 Centerpoint Drive
  Stevens Point, WI 54481
- ❑ Other: _____

  _____

mstc.edu • 888.575.6782 • TTY: 711

MID-STATE TECHNICAL COLLEGE

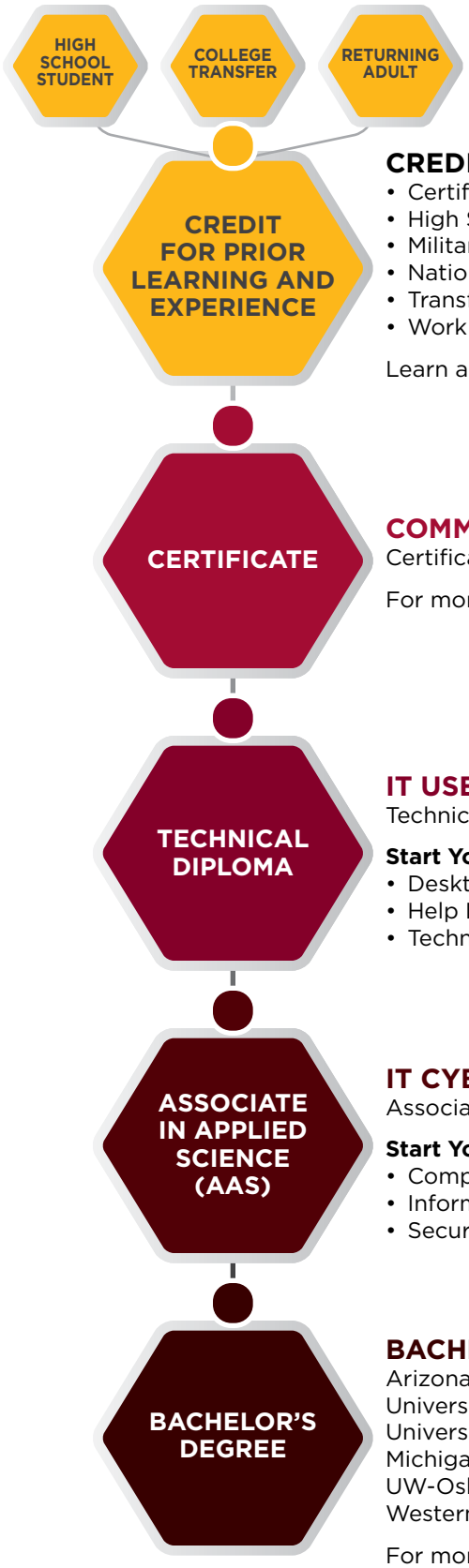
ADAMS CAMPUS
401 North Main
Adams, WI 53910

MARSHFIELD CAMPUS
2600 West 5th Street
Marshfield, WI 54449

STEVENS POINT CAMPUS
1001 Centerpoint Drive
Stevens Point, WI 54481

WISCONSIN RAPIDS CAMPUS
500 32nd Street North
Wisconsin Rapids, WI 54494

CAREER PATHWAY • BEGIN AT ANY POINT



CREDIT FOR PRIOR LEARNING AND EXPERIENCE

- Certifications and Licenses
- High School Credit
- Military Experience
- National/Standardized Exams
- Transfer Credit
- Work and Life Experience

Learn about Credit for Prior Learning at **mstc.edu/cpl**.

COMMUNICATION ESSENTIALS

Certificate • 9 Credits

For more information and additional opportunities, visit **mstc.edu/career-accelerator**.

IT USER SUPPORT TECHNICIAN

Technical Diploma • 24 Credits

Start Your Career

- Desktop Support Specialist
- Help Desk Technician
- Technical Support Specialist

IT CYBERSECURITY SPECIALIST

Associate in Applied Science (AAS) • 60 Credits

Start Your Career

- Computer Security Specialist
- Information Security Analyst
- Security Operations Center (SOC) Analyst

BACHELOR'S DEGREE OPTIONS

Arizona State University, Bellevue University, Colorado State University Global, Concordia University, Franklin University, Grand Canyon University (GCU), Herzing University, Lakeland University, Milwaukee School of Engineering (MSOE), Mount Mary University (MMU), Northern Michigan University, University of Maryland Global, University of Phoenix, UW-Green Bay, UW-Oshkosh, UW-Stevens Point, UW-Stevens Point at Marshfield, UW-Stout, UW-Whitewater, Western Governors University, and Wisconsin Private–Nonprofit Universities/Colleges.

For more information and additional opportunities, visit **mstc.edu/transfer**.

OTHER OPTIONS

RELATED PROGRAMS

• IT Network Specialist • IT Software Developer

OUTCOMES

Employers will expect you, as an IT Cybersecurity Specialist graduate, to be able to:

- Identify security strategies.
- Implement secure infrastructures.
- Conduct security testing.
- Analyze security data.
- Mitigate risk.
- Develop security documentation.

TECHNICAL SKILLS ATTAINMENT

The Wisconsin Technical College System (WTCS) has implemented a requirement that all technical colleges measure outcomes attained by students. This requirement is called Technical Skills Attainment (TSA). The main objective of TSA is to ensure graduates have the technical skills needed by employers. Students will complete a project in the IT Security Capstone course to fulfill the TSA requirements.

NOTES:

STUDENT HANDBOOK

Visit **mstc.edu/studenthandbook** to view Mid-State's student handbook, which contains information about admissions, enrollment, appeals processes, services for people with disabilities, financial aid, graduation, privacy, Mid-State's Student Code of Conduct, and technology.

GRADUATION REQUIREMENT

The GPS for Student Success course is required for all Mid-State program students and is recommended to be completed before obtaining 12 credits. (Not counted in the total credit value for this program.) Some students are exempt from this requirement. Please see your program advisor for more information.

GPS for Student Success
10890102 .....1 credit
Integrate necessary skills for student success by developing an academic plan, identifying interpersonal attributes for success, adopting efficient and effective learning strategies, and utilizing Mid-State resources, policies, and processes. This course is recommended to be completed prior to obtaining 12 credits and is a graduation requirement unless you receive an exemption from your program advisor.

ADDITIONAL COURSES AS NEEDED

The following courses may be recommended or required if the student does not achieve minimum Accuplacer scores.

College Reading and Writing 1
10831104 .....3 credits
Provides learners with opportunities to develop and expand reading and writing skills to prepare for college-level academic work. Students will employ critical reading strategies to improve comprehension, analysis, and retention of texts. Students will apply the writing process to produce well-developed, coherent, and unified written work.

Pre-Algebra
10834109 .....3 credits
Provides an introduction to algebra. Includes operations on real numbers, solving linear equations, percent and proportion, and an introduction to polynomials and statistics. Prepares students for elementary algebra and subsequent algebra-related courses.

SAMPLE FULL-TIME CURRICULUM OPTION

Term		15 credits
10150110	Networking I	3
10151105	Linux	3
10154102	IT Essentials	3
10801198	Speech **-or-**	
10801196	Oral/Interpersonal Communication	3
10804135	Quantitative Reasoning	3

Term		15 credits
10150111	Networking II	3
10150120	Server Administration-Beginning	3
10150165	Network Server Scripting	3
10151110	Information Security 1	3
10152101	Intro to Programming	3

Term		15 credits
10150112	Networking III	3
10151111	Information Security 2	3
10151160	Ethical Hacking	3
10809103	Think Critically & Creatively	3
10809198	Intro to Psychology	3

Term		15 credits
10151112	Information Security 3	3
10151161	IT Security Capstone	3
10151162	Secure Software Applications	3
10801195	Written Communication **-or-**	
10801136	English Composition 1	3
10809166	Intro to Ethics: Theory & Application	3

Total credits 60

This course has options available to receive credit for prior learning (CPL) or work experience. Visit the website at **mstc.edu/cpl** or contact your advisor for details.

Please Note:
- This curriculum sequence is only for student planning. Actual student schedules will vary depending on course availability.
- Program completion time may vary based on student scheduling and course availability. For details, go to **mstc.edu/schedule**.

SAMPLE PART-TIME CURRICULUM OPTION

Term		9 credits
10150110	Networking I	3
10154102	IT Essentials	3
10804135	Quantitative Reasoning	3

Term		9 credits
10150111	Networking II	3
10151110	Information Security 1	3
10152101	Intro to Programming	3

Term		6 credits
10151105	Linux	3
10801198	Speech **-or-**	
10801196	Oral/Interpersonal Communication	3

Term		6 credits
10150120	Server Administration-Beginning	3
10150165	Network Server Scripting	3

Term		9 credits
10150112	Networking III	3
10151111	Information Security 2	3
10809103	Think Critically & Creatively	3

Term		9 credits
10151162	Secure Software Applications	3
10809166	Intro to Ethics: Theory & Application	3
10809198	Intro to Psychology	3

Term		6 credits
10151160	Ethical Hacking	3
10801195	Written Communication **-or-**	
10801136	English Composition 1	3

Term		6 credits
10151112	Information Security 3	3
10151161	IT Security Capstone	3

Total credits 60

MULTIPLE MEASURES	
Multiple Measures Writing (MMW): High school GPA of 2.6 and successful completion of 2.0 credits of high school writing courses with a "C" or better	**Multiple Measures Reading (MMR):** High school GPA of 2.6 and successful completion of 2.0 credits of high school literature courses with a "C" or better
Multiple Measures Math 1 (MMM_1): High school GPA of 2.6 and successful completion of 1.0 credits of high school math (Algebra 1 or equivalent) with a "C" or better	**Multiple Measures Math 2 (MMM_2):** High school GPA of 2.6 and successful completion of 2.0 credits of high school math including Algebra 1 and Algebra 2 with a "C" or better
Multiple Measures Science 1 (MMS_1): High school GPA of 2.6 and successful completion of 1.0 credits of high school lab science course with a "C" or better	**Multiple Measures Science 2 (MMS_2):** High school GPA of 2.6 and successful completion of 1.0 credits of high school chemistry with a "C" or better

Past high school and college transcripts are used in making course placement decisions.

COURSE DESCRIPTIONS

English Composition 1
10801136 .....3 credits
Learners develop and apply skills in all aspects of the writing process. Through a variety of learning activities and written documents, learners employ rhetorical strategies, plan, organize and revise content, apply critical reading strategies, locate and evaluate information, integrate and document sources, and apply standardized English language conventions.
Prerequisite: High School GPA of 2.6 and MMW or Accuplacer Writing of 262 or ACT English score of 20 or completion of College Reading and Writing 1 10831104 with a "C" or better

Ethical Hacking
10151160 .....3 credits
Introduces the techniques hackers use to discover vulnerabilities. Students will learn ways to tighten the network security to protect the exposed data from the discovered vulnerabilities. Focus is on penetration-testing tools and techniques that security testers and ethical hackers use to protect computer networks.
Prerequisite: Information Security 1 10151110

Information Security 1
10151110 .....3 credits
Introduces students to the fundamentals of information security. Topics include security terms and concepts, risk assessment, cryptography, monitoring and auditing, attacks and techniques, and the legal and ethical issues associated with informationsecurity. This course aligns with the CompTIA Security+ certificate. Students can take this certification exam after completing this course.
Corequisite: Networking 1 10150110

Information Security 2
10151111 .....3 credits
Introduces students to network security design, various types of network firewalls, and the basics of VPN configuration. A solid understanding of LAN/WAN fundamentals is required for this course.
Prerequisite: Information Security 1 10151110; Corequisite: Networking III 10150112

Information Security 3
10151112 .....3 credits
This course explores security incidents and intrusions, including identifying and categorizing incidents. Students will be responding to incidents, and analyzing logs and network traffic. Additionally, students will be utilizing various tools and creating an incident response team.
Prerequisite: Information Security 2 10151111

Intro to Ethics: Theory & Application
10809166 .....3 credits
Provides a basic understanding of the theoretical foundations of ethical thought. Diverse ethical perspectives are used to analyze and compare relevant issues. Students critically evaluate individual, social, and/or professional standards of behavior, and apply a systemic decision-making process to these situations.
Prerequisite: High School GPA of 2.6 and MMR and MMW or Accuplacer Reading Skills of 236 and Writing of 237 or ACT of 15 Reading/16 English

Intro to Programming
10152101 .....3 credits
Applies the basic concepts of computer programming having learners build Python applications, with an emphasis on problem solving, structured programming, debugging, and testing. Additional topics include: online software development resources, programming and documentation standards, variable lifetime/scope, data types, control structures (conditions and iterations) working within Microsoft Windows, and mathematical calculations.

Intro to Psychology
10809198 .....3 credits
This science of psychology course is a survey of multiple aspects of behavior and mental processes. It provides an overview of topics such as research methods, theoretical perspectives, learning, cognition, memory, motivation, emotions, personality, abnormal psychology, physiological factors, social influences, and development.
Prerequisite: High School GPA of 2.6 and MMR and MMW or Accuplacer Reading Skills of 236 and Writing of 237 or ACT of 15 Reading/16 English

IT Essentials
10154102 .....3 credits
An introduction course that aligns with the CompTIA A+ certification. This class is designed to teach students how to build, configure, secure, network, and troubleshoot PCs.

IT Security Capstone
10151161 .....3 credits
In this capstone course students complete a project that incorporates skills gained from previous terms. Students demonstrate those skills by creating a project proposal, presenting a technical design, and/or implementing a project based on specifications provided by the instructor.
Prerequisite: Information Security 2 10151111; Corequisite: Information Security 3 10151112

Linux
10151105 .....3 credits
Covers introductory Linux topics, including operating system basics, system installation, file system management, file system administration, and basic commands. This course aligns with the CompTIA Linux+ certificate. Students can take this certification exam after completing this course.

Network Server Scripting
10150165 .....3 credits
Provides best practices and techniques in Linux and Windows shell and command line scripting using PowerShell and BASH.
Prerequisite: IT Essentials 10154102; Corequisite: Server Administration-Beginning 10150120 and Intro to Programming 10152101 or Networking 1 10150110

Networking I
10150110.....3 credits
Introduces the architecture, structure, functions, components, and models of the Internet and other computer networks. The principles and structure of IP addressing and the fundamentals of Ethernet concepts, media, and operations are introduced to provide a foundation for the curriculum. By the end of the course, participants will be able to build simple LANs, perform basic configurations for routers and switches, and implement IP addressing schemes. This course is the first of three courses that align with CCNA certification. Covers the objectives of the first CCNA exam.

Networking II
10150111.....3 credits
Describes the architecture, components, and operations of routers and switches in a small network. It focuses on small-to-medium business networks and includes wireless local area networks (WLANs) and security concepts. Students learn key switching and routing concepts. They can perform basic network configuration and troubleshooting, identify and mitigate LAN security threats, and configure and secure a basic WLAN. This course is the second of three courses that align with CCNA certification. Covers the objectives of the first CCNA exam but is not designed or intended to be a "test prep" course.
Prerequisites: Networking I 10150110 and IT Essentials 10154102

Networking III
10150112 .....3 credits
This course covers wide area network (WAN) technologies and quality of service (QoS) mechanisms used for secure remote access. Students are introduced to network management tools and learn key concepts of software-defined networking, including controller-based architectures and how application programming interfaces (APIs) enable network automation. This course is the final course that aligns with the CCNA certification. The course covers the objectives of the second CCNA exam but is not designed or intended to be a "test prep" course.
Prerequisite: Networking II 10150111

Oral/Interpersonal Communication
10801196 .....3 credits
Focuses on developing effective listening techniques and verbal and nonverbal communication skills through oral presentation, group activity, and other projects. The study of self, conflict, and cultural contexts will be explored, as well as their impact on communication.
Prerequisite: High School GPA of 2.6 and MMR and MMW or Accuplacer Reading Skills of 236 and Writing of 237 or ACT of 15 Reading/16 English

Quantitative Reasoning
10804135.....3 credits
This course is intended to develop analytic reasoning and the ability to solve quantitative problems. Topics to be covered may include construction and interpretation of graphs; descriptive statistics; geometry and spatial visualizations; math of finance; functions and modeling; probability; and logic. Appropriate use of units and dimensions, estimates, mathematical notation, and available technology will be emphasized throughout the course.
Prerequisite: High School GPA of 2.6 and MMM_1 or Accuplacer QAS 241 or ACT Math score of 19 or Pre-Algebra 10834109 or College Math 10804107 with a "C" or better

Secure Software Applications
10151162 .....3 credits
The Secure Software Applications course teaches students about the most common attacks against applications and how to defend against those attacks through secure coding practices and good security hygiene. The class focuses on the OWASP top 10, certificates, code scanning, SDLC Security automation and more.
Prerequisite: Intro to Programming 10152101

Server Administration-Beginning
10150120 .....3 credits
Develops skill in the design, installation, administration, and management of computer networks. Topics include network design; installation and configuration of a commonly used network operating system; service packs and updated drivers; user accounts, groups, profiles, and policies; file system security; printer management; and application software installation, backup, and recovery.
Prerequisite: IT Essentials 10154102; Corequisite: Linux 10151105

Speech
10801198 .....3 credits
Explores the fundamentals of effective oral presentation to small and large groups. Topic selection, audience analysis, methods of organization, research, structuring evidence and support, delivery techniques, and other essential elements of speaking successfully, including the listening process, form the basis of this course. Includes informative, persuasive, and occasion speech presentations.
Prerequisite: High School GPA of 2.6 and MMR and MMW or Accuplacer Reading Skills of 253 and Writing of 262 or ACT of 21 Reading/19 English or completion of College Reading and Writing 1 10831104 with a "C" or better

Think Critically & Creatively
10809103 .....3 credits
Provides instruction about critical and creative thinking that is in high demand in all occupations. Models, theories, and processes provide the foundation for learning logical thinking strategies. Students will apply a systematic approach to problem solving by analyzing the problem, assessing possible solutions, and making effective decisions. In addition, students will generate ideas and analyze complex issues. This course assists students with developing a critical thinking mindset which is essential at every level of personal and professional life.
Prerequisite: High School GPA of 2.6 and MMR and MMW or Accuplacer Reading Skills of 236 and Writing of 237 or ACT of 15 Reading/16 English

Written Communication
10801195 .....3 credits
Develops writing skills which include prewriting, drafting, revising, and editing. A variety of writing assignments are designed to help the learner analyze audience and purpose, research and organize ideas, and format and design documents based on subject matter and content. Also develops critical reading and thinking skills through the analysis of a variety of written documents.
Prerequisite: High School GPA of 2.6 and MMW or Accuplacer Writing of 262 or ACT English score of 20 or completion of College Reading and Writing 1 10831104 with a "C" or better