

Information Technology Curriculum Guide 2023-2024

Program Description

Students learn how to maintain and troubleshoot computers, laptops, mobile devices, and printers. Depending on interest and ability, students may pass up to 5 internationally recognized certifications for the IT industry from Certiport and CompTIA. MCTI's Information Technology program is a recognized CompTIA Authorized Academy.

Program Admissions Requirements

Students who most closely match the **U.S. Department of Labor occupational profile** for [Computer Support Specialists](#) are accepted for enrollment.

CASAS Scaled Scores

- Reading & Math: 228+

Aptitude/Abilities

- General Learning (G) CareerScope: 95+
- Verbal (V) CareerScope: 95+
- Numerical (N) CareerScope: 95+

Temperaments

- Attain precise limits and standards using precision measuring instruments, prepare detailed records, and comply with precise specifications.
- Perform a variety of duties involving equipment and procedures. Complete tasks without loss of efficiency or composure.
- Work alone, without face-to-face interaction for extended periods of time, and work collaboratively in groups.

Physical Demands & Work Environment

Minimum Physical Requirements can be found on the Curriculum Guide online at www.michigan.gov/MCTI

Certificate of Completion Programs

- Digital Literacy & Customer Service
- IT Customer Support
- Computer Support Technician
- Network Support Technician (Optional)

Terms

Depending on skills, interests and abilities, students may be in the Information Technology program from two (2) to four (4) terms, with an optional 5th term at the instructor's discretion. At the end of each term, the instructor invites those students who demonstrate academic progress by maintaining an accumulated grade point average or 2.0 or better and good employability skills to advance to the next term.

Core Certifications

Students who pass required core coursework with a 2.0 or higher are eligible to take industry recognized certification exams. Upon successful completion of these exams (must be taken in sequential order), the student may earn up to a total of five (5) internationally recognized certifications. The Core certification sequence is:

- Certiport IC3 Digital Literacy (GS6, Level 2)
- Microsoft Office Specialist-Word and/or Excel (optional)
- CompTIA IT Fundamentals
- CompTIA A+ (Core I and Core II)

Optional Certifications

Students who are approved to enroll in an optional 5th term may choose to prepare for one additional certification exam:

- CompTIA Network +
- CompTIA Security +
- CompTIA Linux +

Required Courses

To advance from term to term, students must demonstrate academic progress (grade point average of 2.0 or higher) and good employability skills.

Digital Literacy & Customer Service (first term)

Course Number	Course Name	Credits
IT 100	Math Concept Application	2
IT 101	Core Computer Concepts	6
OA 110	Customer Service for Technicians	4

IT Customer Support (second term)

Completion of Digital Literacy & Customer Service Certificate

Course Number	Course Name	Credits
OA 160A	IT Fundamentals	12

Computer Support Technician (third and fourth terms)

Completion of Core Courses +

Course Number	Course Name	Credits
OA 260A	Computer Essentials I	12
OA 265A	Computer Essentials II	12

Network Support Technician (optional fifth term)

Completion of Computer Support Technician Certificate +

Course Number	Course Name	Credits
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Networking Option

OA 145	Essentials of Cybersecurity (optional)	6
OA 225	Essentials of Networking	6
OA 690	Work Internship	6

Security Option

OA 145	Essentials of Cybersecurity (optional)	6
OA 300	Security of Computer Networks	6
OA 690	Work Internship	6

Linux Option

OA 280	Essential of Linux	6
OA 310	Advanced Linux Concepts	6
OA 690	Work Internship	6

Required courses for ALL students (last term)

Course Number	Course Name	Credits
OA 245	Job Search Techniques	2

Electives (Instructor Approval Needed)

Course Number	Course Name	Credits
OA 145	Essentials of Cybersecurity	6
OA 225	Essentials of Networking	8
OA 280	Essentials of Linux	6
OA 300	Security of Computer Networks	6
OA 310	Advanced Linux Concepts	6
OA 680	Independent Study	2-12
OA 690	Work Internship	6-12

Instructors, program managers, and/or the referring counselor may recommend employability skills and elective classes based on the student's needs, interest, and abilities. Additional terms or courses are initiated by the instructor and approved by the Manager of Career and Technical Education programs. Job Search Techniques is a required course for all students expecting to graduate from MCTI's IT Program.

Course Descriptions

IT 101 Core Computer Concepts - This course is designed to gauge and develop students' digital literacy skills using the IC3 Practice Test Assessment and leads to IC3 Digital Literacy certification. The content assigned to students can vary and will include a number of different resources to enhance skills in three main areas, as determined by the IC3 Competencies/Objectives.

OA 110 Customer Service for Technicians - This course is for students who will deal with customers in a business setting. Students learn to understand themselves and others and learn different techniques for dealing with various customer situations.

OA 145 Essentials of Cybersecurity - This course develops foundational understanding of cybersecurity and how it relates to information and network security. Introduces students to characteristics of cybercrime, security principles, technologies, and procedures to defend networks. Through interactive, multimedia content, lab activities, and multi-industry case studies, students build technical and professional skills to pursue careers in cybersecurity.

OA 160A IT Fundamentals - In this course, students learn to identify and explain basic computer components, workstation set up, software installation, network connectivity, hardware and software compatibility issues, and security risk prevention. The preventative maintenance of computer systems is emphasized. This training is intended for students who are considering a career in IT and the pursuit of a CompTIA A+ or similar certification. CompTIA ITF+ certification must be obtained within 10-15 weeks from the start of the coursework.

OA 245A Job Search - This course introduces students to Information on career readiness skills and resources available on- and off-campus to help obtain employment.

Topics Covered: Job seeking techniques, completing online applications, resume' writing, researching a job/company, job interviewing strategies, ABC's of networking, identifying key skills.

OA 260A Computer Essentials I - This course prepares students for the CompTIA A+ Essentials certification. The student will perform fundamental techniques in the operation, building, configuration, performing preventative maintenance, interfacing, upgrading, and troubleshooting PC/Personal computers & peripheral devices. This hands-on learning for maintaining and servicing computer equipment targets students seeking to become entry-level IT professionals. **Topics Covered:** Desktop/Laptop configuration, set up, interfacing, upgrading, and troubleshooting of PC/Personal computers, functional processes of printing devices (Dot-Matrix, inkjet, and Laser), and techniques for maintaining and servicing this equipment.

OA 265A Computer Essentials II - This course prepares students for software, security, cloud, and troubleshooting of computer equipment. Course is for students seeking to become information technology (IT) technicians or remote desktop/helpdesk support for the IT industry. The business setting, customer support, troubleshooting and servicing of computer and peripheral equipment at the intermediate and advanced levels. **Topics Covered:** Configuration of Windows operating systems; analyzing boot processes; supporting hardware and software; customer service in IT industry; troubleshooting malfunctioning computer devices. Leads to CompTIA A+ exam objectives.

OA 280 Essentials of Linux - This course provides foundational knowledge to the Linux operating system. Give students the essential skills to begin usage and management of open-source Linux software.

OA 300 Security of Computer Networks - This highly interactive course is for students interested in maintaining network computers. Students learn skills required to implement and monitor basic security services on any type of network and computer system and respond to security breaches. **Topics Covered:** Security threats, secure systems and devices, network communication, PKI, certificates, organizational security policies, security infrastructure. Leads to CompTIA Security+ exam and Microsoft Security Fundamentals exam objectives.

OA 310 Advanced Linux Concepts - This course provides advanced Linux knowledge to perform administrator tasks within Linux command line; install and configure a computer running Linux and configure basic networking; handle files and access permissions as well as system security; and perform easy maintenance tasks such as help users, add users to a larger system, backup and restore, install LAMP stack, shutdown, and reboot. Give students the skills to begin usage and management of open-source Linux software.

OA 680 Independent Study - This course is designed for students enrolled in an Information Technology program of study and who want to work on individualized projects that are not offered in the curriculum or for those students who need extra time mastering a skill. Independent study is useful to students who want to apply their skills to a work-related project either on-campus or at a local business. An independent study course is individualized based on the student's ability and interest and the business or school-need.

OA 690 Work Internship - This course is for students enrolled in the Information Technology program who want/need real-work experience prior to accepting a full-time job. Internships provide students with an opportunity to apply skills learned in school in a workplace setting, to evaluate themselves as a worker and potential employee. Internships provide experience that help build confidence in abilities.