



[INFORMATION TECHNOLOGY ACADEMY(ITA)]

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It is a 4 year – 5 credit CTE program for students interested in any fields within the Department of Labors – **Information Technology Career Cluster:**

- *Information Support and Services,*
- *Network Systems,*
- *Programming and Software Development*
- *Web and Digital Communications.*

The ITA has been at East for 17 years and offers a customized curriculum that is a mix of IT fundamentals with “hands-on” experience. Students build and support a PC; design, build and program miniature robots; create programs in Python and Java; design and build websites; network computers; design, build and play video games; create animations and much more. Students in the program also have opportunities for high school internship in the IT field.



We live in a society exquisitely dependent on science and technology, in which hardly anyone knows anything about science and technology.

Carl Sagan

BACKGROUND/HISTORY

In 2002, East High School was asked by the National Academy Foundation to be one of eight pilot schools for their new Academy of Information Technology program.

The program was opened on a CTE grant and supported for its first five years of growth with Carl Perkins monies. The program was targeted to have approximately 25 students per grade level or 100 students' grades 9-12. The program parted ways with the National Academy Foundation in 2014 and the name was changed to Information Technology Academy.

Since 2005, 98% of the students who complete the requirements for the program graduate and do so within the four years, many receiving both their CTE Certification and the Advanced Regents Designation.

Graduates are attending colleges such as RIT, SUNY Alfred, Canton, Brockport, Geneseo, University of Buffalo or MCC; while others are using their technical skills in the military and workplace. These same graduates are working in the IT field both locally and across the country in: software development, web development/design, network engineering, biotechnology, System Architecture & Support, Help Desk and more. We even have two graduates who have started their own IT firms.

CURRICULUM

The curriculum for the program has been developed and vetted by industry partners and is CTE endorsed through 2021. Monroe Community College serves as our Post-Secondary college partner; however, we also look to Alfred State and Rochester Institute of Technology’s IT programs as well (see *Appendix A, B and C*)

PATHWAY SEQUENCE

<p>Grade 9 (1 Option)</p>	<p>Introduction to Information Technology To Computer Hardware & System Support</p>	<p>Recommended Core:</p> <ul style="list-style-type: none"> - 4 Years Math *Pre-calculus/Calculus - 4 Years Science *Physics/AP-Physics
<p>Grade 10 (1 option)</p>	<p>Passed Introduction to IT Computer Hardware & System Support To Computer Programming/or/ Advanced Computers & Digital Media</p>	<p>Recommended Electives:</p> <ul style="list-style-type: none"> - Media Design I - ASL/Spanish 3-Years - Music Technology - Computer Keyboarding - Entrepreneurship
<p>Grade 11 or Grade 12</p>	<p>Passed Computer Hardware & SS Computer Programming OR Advanced Computers & Digital Media*</p>	<p>Required Elective: Careers & Money Management <i>(CFM)</i> <i>Required for CTE Endorsement & CDOS</i></p>

<p>PATHWAY EXAMS/CERTIFICATIONS</p>
<p>NOCTI 4122 COMPUTER TECHNOLOGY</p>
<p>CDOS SKILLSUSA EMPLOYABILITY EXAM (4 + 1)</p>

COURSE DESCRIPTIONS

Course 1: Introduction to Information Technology

Prerequisite(s): None

Grade Level(s): 9

Unit of Credit: 1.0

Introduction:

This course provides an overview of Information Technology today. It serves as the foundation for all of the core courses offered by the Information Technology Academy. The course provides students with an introduction to the field of IT and allows students the opportunity to explore the skills needed and careers available in this field.

This course focuses on:

1. Introduction to IT: History, Growth, Future
 2. IT Careers
 3. Internet History/Tools & Technology/Internet Infrastructures/Networks/HTML
 4. Hardware/Hardware Support
 5. Software/Software Support/Intro to Scheme, Python, Java, HTML
 6. Information Security/ Emerging Technologies
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Course 2: Computer Hardware & System Support

Prerequisite(s): Introduction to Information Technology

Grade Level(s): 10-11

Unit of Credit: 1.0

Introduction:

This course is setup to provide hands-on instruction in two parts:

- **Part one** familiarizes the student with setting up hardware, installing software, managing system resources, understanding how the parts of a computer system work together, peripherals, connecting to a network, connecting to the Internet and basic PC troubleshooting.
- **Part two** continues on by introducing the student to network topologies, network setups such as peer-to-peer and client/server networking, network components, cables and connectors, troubleshooting common TCP/IP Ethernet networks, OSI model and also touches on Wi-Fi and telecommunications networking.

This course is broken into 4 units:

1. Hardware & System Construction
 2. System and Application Software
 3. System Support
 4. Network Communications
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Note: This course is the foundation for 90% of all internship placements and the focus for the CTE Employability Profile (See Appendix D) – it is also the foundation course for our national NOCTI Exam

Course 3: Computer Programming I
Prerequisite(s): *Intro to IT*
& *Computer Hardware & System Support*

Grade Level(s): 11-12
Unit of Credit: 1.0

Introduction:

Computer Programming uses the Python programming language as well as Java to introduce students to basic programming skills. Students learn the principles of programming. The course begins with algorithms; then it lays a foundation of mastering variables, operators, and control structures. Students use models as a way to quickly solve new problems using knowledge and techniques already learned. After this foundation is established, students learn to design programs and write functions. In addition, students learn program design, documentation, formal debugging, and testing.

This course is broken into 4 units:

1. History/Structures of Programming
2. Python Language - Basics
3. Python Language – Conditionals/Functions/Graphics
4. Java Language - Basics

Course 4: Advanced Computers/Digital Media
Prerequisite(s): *Intro to IT &*
Computer Hardware & System Support

Grade Level(s): 11-12
Unit of Credit: 1.0

Introduction:

**** Dual-Enrollment (4 credit) Course MCC Office Technologies 121**

This is the capstone class for the Information Technology Academy. The goal of this class is to polish the software skills and interactive media skills necessary for college and a career. This course includes the college and job readiness documentation necessary for graduating seniors as well as the Microsoft Office skills and multimedia skills necessary for success at college or in the job market.

1. Word/Word Processing Proficiency (College/COE)
2. Excel/Spreadsheet Proficiency & Access/Database Basics
3. PowerPoint/ Presentation Proficiency
4. Digital Media (Adobe Suite)