A Letter from the President

Dear Prospective Student:

I’d like to take this opportunity to thank you for your interest in the Cleveland Institute of Electronics (CIE) and to congratulate you on taking a big step toward furthering your education and your career.

The world of electronics and computer technology is both fast-changing and extraordinarily challenging.

Whether you’re interested in computer technology, wireless communications, digital electronics, A+ certification, computer programming or electronics, Cleveland Institute of Electronics has a distance learning career program to put you ahead in these high-tech fields.

Our faculty and staff are among the most dedicated, caring and knowledgeable individuals in education.

And our graduates leave CIE as the skilled technicians and engineering technologists best equipped to tackle the complexities of today’s industry, whether it’s in computer technology, broadcast engineering, high-tech manufacturing, computer programming, robotics, or microprocessor technology.

Let us welcome you into this challenging and rewarding new technological frontier. We’ll be with you every step of the way.

Sincerely,

John Randall Drinko
President

A History of Our Growth

1934
Carl Smith establishes CIE as the Smith Practical Radio Institute.

1956
CIE patents the Auto-Programmed® method of learning.

1969
CIE develops the first customized laboratory training equipment for home use.
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Approvals

1. Approved by the Ohio State Board of Career Colleges and Schools to offer postsecondary programs of electronics, computer technology and electronics engineering technology. Registration Certificate 70-11-0002H.

Contact Information

Cleveland Institute of Electronics
1776 E. 17th Street
Cleveland, OH 44114

Call us toll-free (800) 243-6446 or email us at instruct@cie-wc.edu

Every effort was made to assure the accuracy of this catalog. The Cleveland Institute of Electronics reserves the right to make changes in curriculum, faculty and policies. Please consult the appropriate department for current information.

1981
The Institute of Electrical and Electronics Engineers votes to allow CIE students to join IEEE as student members.

2011
Live Video Lectures

2014
New Automation and Robotics Course
New Computer Security Specialist Course
Our graduates agree: distance education offers tremendous advantages over traditional on-campus training.

As a CIE student, you can study on your own time, so you can keep your present job and “earn while you learn”. CIE lets you tailor your education to your career goals, so you can focus on just the training you need.

Have questions, or need assistance?
Call CIE Toll-FREE 1-800-243-6446 (CIE-OHIO)
www.cie-wc.edu
Basic Core Lessons
You will find that most of CIE’s courses are designed around a core of lessons that cover basic theories applicable to many areas of electronics and computer technology. Courses 11 and 14B contain the same initial 93 lessons that together comprise Course 1B. This is the course that teaches basic electronics, and goes on to increasingly more advanced lessons.

Intermediate & Advanced Level Courses
For those individuals who already possess some electronics knowledge, CIE has designed several specific courses. Our intermediate level courses include courses 1A, 2, 4, & 5. You can pick up where your previous electronics training left off, or update your present skills. These non-laboratory courses can be the answer to upgrading your skills to the desired level.

A Programmed Approach to Learning
CIE has a study method that’s so good, so innovative, it’s patented. It’s called the AUTO-PROGRAMMED® teaching method, and it did nothing short of setting a new standard for education through distance learning. AUTO-PROGRAMMED® lessons allow you to learn electronics one step at a time, and you determine the size of the step.

Practical, Hands-On Training
As a CIE student, you can train on your own laboratory equipment, which assures you that you can practice whenever you like, and repeat experiments as often as you need, to master them.

On-Line Exams
Take your exams online on our e-grade web site anytime you want - day or night! Your graded exams will be processed and e-mailed back to you within 24 hours.

Textbook Buyback Program
Some CIE lesson modules include textbooks that qualify for our Textbook Buyback Program. The program enables you to sell your textbooks back to CIE for tuition credit once you are finished with them.

Personalized Training From A Dedicated Faculty
CIE’s dedicated staff of instructors do more than just grade your exams; they help guide you, step-by-step, through your studies and hands-on training. They personally review each written report. They’ll encourage you when you’re doing well, and give you support when you need it. Most importantly they’ll see that every question you have receives careful consideration by one or more members of the staff. You can be sure the response, whether it’s a simple explanation or an in-depth theoretical discussion, will be prompt, courteous, and thorough.

Instructor Chat Room
The CIE faculty keeps regular office hours where you can talk to them live via the CIE chat room. Simply log on and ask an Instructor a question right from your computer!

Video Library
Watch a CIE instructor discuss a variety of lessons and hands-on labs in our video library. Log on any time and learn from the comfort of your own home!

Resources
There is no formal campus or classrooms at CIE, but you will find all the educational resources of a traditional residential education center here. We provide the opportunity to purchase optional lab equipment and an array of school items... we publish our own school paper on the internet ... we make membership available to an honor society and professional associations... interactive instructor chat room... and lesson grading is available through e-grade.

Employee Education Programs
Group training is available through the CIE Employee Education Program. This program exists to serve employers who have the need to train three or more employees at the same time. A company can receive substantial tuition discounts for participating in this program and using CIE either as an extension of its own training program or as a substitute for one. CIE group training is acknowledged and applauded by many companies. They have found CIE’s training programs to be a cost-effective alternative or supplement to national company training programs.

Specialized Training
If you need to modify course work in some fashion to accommodate the specific needs of a company training program, we can do that. Consultation with a CIE Admissions Advisor is necessary to work out the details.

Progress Reports
Periodic progress reports on each employee enrolled under the Employee Education Program is provided to the employer during training. A proctored final examination is given – at the company’s option – to assure successful mastery of the subject material.

Getting Started
Companies interested in getting more information on CIE’s Employee Education Programs should contact CIE’s Industrial Sales Manager at 1-800-243-6446 (CIE-OHIO).
Automation and Robotics with Lab

Course Description
Learn how to design, build and test a robot while incorporating automation concepts.

This course blends multiple disciplines including Electronics, Robotic Controls, Automated Systems and PLCs to give students a well rounded education in Robotic Technology and Automation.

With its unique collection of hands-on labs, lessons, exercises, simulations and interactive media this program will prepare students for a wide range of careers in the rapidly growing Robotics Automation field.

Best of all, students will actually build, troubleshoot and operate a robot!

After you complete this course you’ll be able to master automation technologies used in today’s industrial environment.

Course 5B includes 48 lessons with instructor support that culminates in a Certificate from Cleveland Institute of Electronics.

• Completion time allowed is 12 months
• Clock Hours: 480

Learn how to:
• Troubleshoot robotic systems
• Program microprocessors
• Align, fit and assemble robot component parts
• Maintain, calibrate, tune and program industrial automated systems
• Test robotic assemblies
• Develop and test robotic path motions

Understand why:
• Programmable controllers control automation
• Electronics, circuits and sensors effect automation controls
• Hydraulics and pneumatics move industrial robots

LESONS
DC Circuit Theory
• Current and Voltage
• Controlling Current and Voltage
• The Three Basics of Electric Circuits: Voltage, Current, and Resistance
• Ohm’s Law, Conductors, and Insulators
• Parallel Circuits
• Equivalent Circuits
• Applications of Kirchhoff’s Laws
• Series-Parallel Circuits
• Voltage and Power
• Simplifying Circuit Analysis by Using Kirchhoff’s Laws
Robotics Lab

This lab includes hands-on exercises that will show you how to design, build and program an autonomous robot.

It’s a great orientation to electrical and computer engineering with lessons on circuits, components, instrumentation and electronic prototyping. In addition, students learn how to troubleshoot computer hardware and software.

Starting with basic movement and proceeding to sensor-based projects, students quickly learn how interface a small semi-autonomous wheeled robot to a microprocessor.

AC Circuit Theory
- Vital Statistics of AC Circuits
- Magnetism and Magnetic Circuits
- Induced Voltage and Current
- Inductance
- Mutual Inductance and Magnetic Coupling
- Transformers
- Electrical Charges and Capacitance
- Capacitors in Action
- Currents and Voltages in AC Circuits
- Using Semiconductor Diodes
- Operation of Semiconductor Devices
- Unregulated Power Supplies
- Regulated Power Supplies

Automation Systems
- Binary Coding and Computer Arithmetic
- Important Digital Integrated Circuits
- Industrial Control Overview
- Methods and Operation of the Controller
- DC Motors and Drives
- AC Motors and Drives
- Servo Motors and Servomechanisms
- Pressure Systems & Temperature Control
- Flow Control and Level Control Systems
- Analytical and Industrial Instrumentation
- Detection Sensors
- Programmable Controllers
- PLC Programming, Interfacing and Troubleshooting
- Motion Control
- Industrial Networking

Microcontrollers and Robotics
- Hardware, Software and LEDs
- Pushbuttons and Controlling Motion
- Measuring Rotation and Digital Displays
- Pushbuttons, Piezoelectric Speaker and Controlling Motion
- Testing the Servos
- Assembling the Boe-Bot
- Navigation – Tactical and Whiskers
- Navigation with Phototransistors
- IR Navigation
- Robotic Distance Control and Detection

END OF LESSONS REQUIRED FOR CERTIFICATE
Electronics Technology with Laboratory

**Course Description**
Course 1B is designed for students with no previous electronics experience and provides a solid core of instruction in electronics. Students graduate as readily employable electronics technicians or may continue their education with full academic and tuition credit applied towards more advanced CIE programs: Courses 11 and 14B.

- 93 Lessons with Instructor Support
- Completion Time Allowed: 24 Months
- 201 Laboratory Experiments using CIE’s Personal Training Laboratory with CIE’s Multimeter
- Preparation for CET Exam
- Clock Hours: 1,035

**What will you learn?**
This program starts with the basics of electronics and then moves on to more advanced topics that include:

- AC and DC circuit theory.
- Identifying components.
- Working with printed circuit boards.
- Relays.
- Robots.
- Regulated power supplies.
- Troubleshooting digital systems and more!

**LEssonS**

- Current and Voltage
- Controlling Current and Voltage
- Power Distribution
- Portable Extension Cords
- Static Electricity
- Electric Currents and Semiconductor Devices
- Fractions and Decimal Numbers
- Reciprocals, Percentages, and Powers of Numbers
- The Three Basics of Electric Circuits: Voltage, Current, and Resistance
- Ohm’s Law, Conductors, and Insulators
- Connecting and Tracing Battery Circuits
- Identifying Components
- Tracing Wiring on Printed Circuit Boards
- Roots of Numbers, Ratio, and Proportion
- Inverse Proportion and Negative Numbers
- Parallel Circuits
- Equivalent Circuits
- Applications of Kirchhoff’s Laws
- Series-Parallel Circuits
- Voltage and Power
- Vital Statistics of AC Circuits
- Magnetism and Magnetic Circuits
- Induced Voltage and Current
- Thinking Circuits and Automatic Switches
- Relays and Robots
- Scientific Notation
- Units of Measure
- Inductance
- Mutual Inductance and Magnetic Coupling
- Transformers
- Electrical Charges and Capacitance
- Capacitors in Action
- Rectifiers and Amplifiers
- Transistor and FET Amplifiers
- Reading and Using Graphs
- Phasors and Formulas
- Reliable Soldering Techniques
- Working with Printed Circuit Boards
- Building a Siren with Flashing Light
- Using Your Multimeter to Measure Resistance
- Your Personal Training Laboratory
- Series and Parallel Resistor Circuits
- Power and DC Circuits
- Simplifying Circuit Analysis by Using Kirchhoff’s Laws
- Practical Applications of Kirchhoff’s Laws
- Currents and Voltages in AC Circuits
- Capacitors and Capacitive Circuits
- Resonant Circuits
- Inductors and Inductive Circuits

**NOTE:** The first 36 lessons in Course 1B are also in Courses 1A, 2, 4, and 5.
What is a Certified Electronics Technician?

- Course 1B includes a study guide on how to prepare for the Associate-Level Certificated Electronics Technician (CET) exam.
- This test is administered by the International Society of Certified Electronics Technicians and has over 46,000 certified technicians across the globe! Certification enables employers to separate knowledgeable job applicants from those with less training and skills.
- Courses 1A, 2, 4, 5 and 11 also include the CET Study Guide.
Electronics Technology With FCC License Preparation

Course Description
Course 1A was designed to help a person obtain the General Radiotelephone Operator License (GROL) and gain a thorough education in electronics. The GROL is required to adjust, maintain, or internally repair any FCC licensed radiotelephone transmitters in the aviation, maritime, and international fixed public radio services. It is issued for the lifetime of the holder.

Through the years, CIE has been able to compile a great amount of information concerning the types of questions that the FCC include in their examinations. Course 1A includes this information and passes it along to you with additional hints that will help you obtain your FCC General Radiotelephone Operator License (GROL).

What will you learn?
The curriculum is well rounded and is not restricted to a specific job or industry. It starts with the basics of electronics and then moves on to more advanced topics that include:

- AC and DC circuit theory
- Identifying components
- Digital systems
- Fiber optics
- Lasers
- Digital and data communication
- FCC GROL exam preparation and more

LESSONS

- First 36 lessons from Course 1B (see page 8)
- Simplifying Circuit Analysis by Using Kirchhoff’s Laws
- Currents and Voltages in AC Circuits
- Resonant Circuits
- Using Semiconductor Diodes
- Operation of Semiconductor Diodes
- Unregulated Power Supplies
- Operation of Tubes and Transistors
- Amplifiers
- How to Work With Transistors
- Audio Amplifiers and Equipment
- Radio Frequency Amplifiers
- Oscillators
- Operational Amplifiers
- Measuring and Measuring Instruments
- Understanding and Using the Oscilloscope
- Regulated Power Supplies
- Systematic Troubleshooting
- Digital Switching Units
- Sensors used in the Robotics System
- Robot Control System
- Logic Circuit Tracing by Boolean Algebra
- Circuit Response to Non-Sinusoidal Waveforms
- Digital IC Families with Practical Operating Requirements
- Clippers, Clampers and Binaries
- Pulse Processing Circuits
- Important Digital ICs
- Digital Systems and How To Troubleshoot Them
- Improving Your Understanding of Tuned-Stage Operation
- Modern Modulation Methods
- Suppressed Carrier Modulation
- Detection and Frequency Conversion
- Receiving Equipment
- Batteries, Control Motors, and Other Power Sources
- Frequency Modulation
- Transmission Lines and Wave Guides
- Communication by Fiber Optics
- Antennas and Wave Propagation
- Transmitters
- Microwave Communications Systems
- Monochrome and Color Television
- Digital and Data Communication
- Lasers in Communications and Industry
- FCC Review Lessons Element I - Part I & II
- Pointers & Practice For Passing FCC General Class Exam Part I & II

END OF LESSONS REQUIRED FOR DIPLOMA

Optional Lesson at No Extra Charge:
- Associate-Level CET Study Guide (See page 9)
Course Description

Course 2 is designed to provide the specialized knowledge required for a career as a broadcast engineering technician at an AM or FM radio station or at a TV station. This course is also valuable for the cable television technician who must maintain and repair studio equipment. This course explores important theories and principles related specifically to broadcasting, but because it does not contain any laboratory work, it is best suited to those students who already have some previous education or practical experience in electronics.

- 95 Lessons with Instructor Support
- Completion Time Allowed: 24 Months
- Clock Hours: 915
- Preparation for CET and FCC Exams
- Graduates may be eligible to earn a Certified Broadcast Technologist certification (CBT) from the Society of Broadcast Engineers (SBE). SBE is the only organization devoted to the advancement of all levels and types of broadcast engineering.

LESSONS

Master the basics of High-Definition Video Filmmaking and then move on to more advanced topics such as how to install and configure an HDV editing system, lighting for HDV, how to edit and mix audio and how to use 3D images and animations in your work.

- First 36 lessons from Course 1B (see page 8)
- Simplifying Circuit Analysis by using Kirchoff's Laws
- Currents and Voltages in AC Circuits
- Resonant Circuits
- Using Semiconductor Diodes
- Operation of Semiconductor Devices
- Unregulated Power Supplies
- Operation of Tubes and Transistors
- Amplifiers
- How to Work with Transistors
- Audio Amplifiers and Equipment
- Radio Frequency Amplifiers
- Oscillators
- Operational Amplifiers
- Measuring Instruments
- Understanding and Using the Oscilloscope
- Regulated Power Supplies
- Systematic Troubleshooting
- Circuit Response to Non-Sinusoidal
- Clippers, Clampers and Binaries
- Introduction to Communications Systems
- Radio-Frequency Circuits
- Amplitude Modulation
- Angle Modulation
- Transmitters
- Receivers
- Digital Communication
- The Telephone System
- Data Transmission
- Local-Area Networks
- Wide-Area Networks and the Internet
- Digital Modulation and Moderns
- Multiplexing and Multiple-Access Techniques
- Transmission Lines and Radio-Wave Propagation
- Antennas
- Microwave Devices
- Terrestrial Microwave Communications Systems
- Television Fiber Optics
- Satellite Communication
- Cellular Radio
- Personal Communication Systems
- Paging and Wireless Data Networking
- Fiber-Optics
- Fiber-Optics Systems
- FCC Review Lessons Element 1 Part 1
- FCC Review Lessons Element 1 Part 2
- Pointers & Practices for Passing FCC G.C. Exam Part 1
- Understanding High-Definition Video Formats
- Choosing an HDV Camcorder
- Installing and Configuring and HDV Editing System
- Operating an HDV Camcorder
- Lighting for HDV
- Designing Effective Compositions
- Editing HDV
- Color Correcting Video
- Editing and Mixing Audio
- Creating Graphics and Effects for HDV
- Working with 3D Animation and Effects
- Delivering HDV Content

END OF LESSONS REQUIRED FOR DIPLOMA

Optional Lesson at No Extra Charge:
- Associate-Level CET Study Guide. See Page 9.
Industrial Electronics with PLC Technology

Course Description
Learn to troubleshoot PLCs!

Course 5 provides a thorough understanding of industrial electronics and essential troubleshooting techniques necessary to maintain, repair and program a wide array of industrial electronic equipment including robotics, servos and programmable logic controllers. In addition, students graduate with the ability to read and understand many different types of schematics and operational manuals.

This course provides a well-rounded electronics education, but because it does not contain laboratory work, it is best suited for those students who already have some previous education or practical experience in electronics.

- 78 Lessons with Instructor Support
- Completion Time Allowed: 18 Months
- Clock Hours: 930
- Preparation for CET Exam (See page 9.)

LESSONS
- First 36 lessons from Course 1B (see page 8)
- Simplifying Circuit Analysis by Using Kirchhoff’s Laws
- Currents and Voltages in AC Circuits
- Resonant Circuits
- Using Semiconductor Diodes
- Operation of Semiconductor Diodes
- Unregulated Power Supplies
- Operation of Tubes and Transistors
- Amplifiers
- How to Work With Transistors
- Audio Amplifiers and Equipment
- Radio Frequency Amplifiers
- Oscillators
- Operational Amplifiers
- Measuring Instruments
- Understanding and Using the Oscilloscope
- Regulated Power Supplies
- Systematic Troubleshooting
- Circuit Response to Non-Sinusoidal Waveforms
- Digital Switching Units
- Binary Coding and Computer Arithmetic
- Logic Circuit Tracing by Using Boolean Algebra
- Digital IC Families with Practical Operating Requirements
- Clips, Clampers and Binaries
- Pulse Processing Circuits
- Important Digital Integrated Circuits
- Digital Systems and How To Troubleshoot Them
- An Overview of Industrial Control
- Methods and Operation of the Controller
What will you learn?

- AC and DC circuit theory
- Identifying components
- Robotics
- Programmable Logic Controllers
- Servomechanisms
- Motion and Flow Control
- PLC Troubleshooting & Programming

- DC Motors and Drives
- AC Motors and Drives
- Servo Motors & Servomechanisms
- Pressure Systems and Temperature Control
- Flow Control and Level Control Systems
- Analytical and Industrial Instrumentation
- Detection Sensors
- Programmable Logic Controllers
- PLC Programming, Interfacing and Troubleshooting
- Motion Control
- Functional Systems
- Introduction to Robotics
- Mechanics Part I - Statics
- Mechanics Part II - Dynamics

END OF LESSONS REQUIRED FOR DIPLOMA

Optional Lesson at No Extra Charge:
- Associate-Level CET Study Guide, (See page 9)
Electronics Technology & Advanced Troubleshooting 1&2

Course Description
Course 11 is a beginning-level course that expands on the lessons from Course 1B to include electronics troubleshooting training. Students graduate with the ability to service consumer electronics such as TV and home audio equipment. This course contains all the lessons and equipment described for Course 1B.

- 118 Lessons with Instructor Support
- Completion Time Allowed: 36 Months
- Clock Hours: 1,260
- 201 Laboratory Experiments using CIE’s Personal Training Laboratory with CIE’s Multimeter
- Preparation for CET Exam

What will you learn?
Electronics Technology and Advanced Troubleshooting starts with the basics of electronics and then moves on to more advanced topics that include:

- AC and DC Circuit Theory
- Identifying Components
- Working with Printed Circuit Boards
- Relays & Robots
- Regulated Power Supplies
- Troubleshooting Digital Systems
- Television Troubleshooting Techniques
- Advanced Troubleshooting Techniques
- Understanding and Using the Oscilloscope
- Advanced Troubleshooting of Modern Circuitry and more
Electronics Technology with Digital & Microprocessor Laboratories

Course Description
Course 14B is CIE’s most advanced troubleshooting program. This course expands on the lessons from Course 1B to prepare students for jobs in computer maintenance, advanced industrial control/instrumentation systems, and microprocessor control.

This is a laboratory-intensive course that contains all the lessons and equipment described for Course 1B plus the equipment and lessons listed below.

- 155 Lessons with Instructor Support
- Completion Time Allowed: 42 Months
- Clock Hours: 1,590
- Over 140 Laboratory Experiments using CIE’s Personal Training Laboratory, Multimeter, and Digital Security Control Device
- Preparation for CET Exam

What will you learn?
This program starts with the basics of electronics and then moves on to more advanced topics that include:

- AC and DC circuit theory
- Identifying components
- Working with printed circuit boards
- Relays & Robots
- Regulated power supplies
- Troubleshooting digital systems
- PIC Program Coding and the 68HC11 Microcontroller
- Oscilloscope Measurements
- Introduction to Computers and Microprocessors
- Digital Integrated Circuits
- Digital Systems and How To Troubleshoot Them
- Plus more!

ALL LESSONS

- All lessons from Course 1B (see page 8)
- Safety
- Introduction to Television
- The Television System-Functional Block Diagram
- Television Troubleshooting Techniques
- Power Supplies
- Horizontal Circuits
- Vertical Circuits
- Tuners
- Intermediate Frequency Amplifiers
- Video Circuits and the CRT
- AGC Circuits
- Synchronization Circuits
- Introduction to Color Television
- Color Circuits
- Color Symptom Troubleshooting
- Color TV Setup
- Sound Circuits
- Advanced Troubleshooting Techniques
- Introduction to Digital Electronics
- Number Systems
- Fundamentals of Boolean Algebra
- Karnaugh Maps
- NOR and NAND Gate Circuits
- Discrete Logic Gates
- Digital Integrated Circuits
- Digital Flip-Flops
- One-Shots, Astables and Schmitt Triggers
- Counter Design
- Modulus Counters
- Shift Registers and Counters
- Binary Codes and Converters
- Multiplexers-Demultiplexers
- CMOS Digital Logic
- Digital Interfacing Circuits
- ROMs, PROMs and PLAs
- Introduction to Computers and Microprocessors
- Oscilloscope Measurements
- Oscilloscope Triggering
- Oscilloscope Analysis of Analog and Digital Circuits
- Registers
- Arithmetic Logic Units
- Timing and Control
- Memory Units
- Introduction to Computer Hardware
- Introduction to Computer Software
- Computer Arithmetic
- 68HC11 Programming, Part A
- 68HC11 Programming, Part B
- Branching and Loops
- Indexing Through Memory
- Subroutines
- Reading Assembly Listings
- Memory Systems I
- Memory Systems II
- General Purpose I/O
- HC11 Interrupts and Resets
- Analog Capture Port-Port E
- Timed Events-Port-A
- Serial Communication-Port D
- C-Language: A Higher-Level Language

END OF LESSONS REQUIRED FOR DIPLOMA

Optional Lesson at No Extra Charge:
- Certified Electronics Technician
- (CET) Study Guide (Associate-Level)
Course Description

CIE’s Computer Programming with JAVA and C# was designed to provide an individual having little or no computer background with the knowledge to join the ever-growing field of computer programming!

Students graduate with the ability to understand, analyze and program various computer applications used in the business, manufacturing and service industries today.

In addition, you will be able to develop and build Web Pages and learn how to install and run applications and perform basic system management on your PC.

- 48 Lessons with Instructor Support
- Completion Time Allowed: 12 Months
- Clock Hours: 810
- Course 1C requires Windows • Microsoft Internet Explorer • Connection to the internet.
What will you learn?

This unique distance learning course includes 48 lessons on:

- Introduction to Computers
- Operating Systems
- Create a Multimedia Web Page
- Intro to JAVA
- C# Programming

Operating Systems
- Introduction to Operating Systems
- Computer Security Basics
- Desktop Virtualization
- Disk Operating System (DOS)
- Windows XP Professional
- Windows Vista and Windows 7
- Under the Windows
- Linux on the Desktop
- Mac OS X on the Desktop
- The Client Side of Networking

An Introduction to Web Page Design
- Web Page Development with Hypertext Links
- Designing a Web Page
- Frames and Tables in Web Pages
- Creating Web Page Forms
- Working with Cascading Style Sheets

- Programming with JavaScript
- Working with JavaScript Objects & Events
- Creating a Multimedia Web Page
- Working with Dynamic Page Layout I
- Working with Dynamic Page Layout II

Introduction to Java Programming:
- Intro to Computers, the Internet and WWW
- Intro to Java Applications
- Intro to Classes & Objects
- Control Statements Part 1
- Control Statements Part 2
- Methods: A Deeper Look
- Arrays
- Classes and Objects: A Deeper Look
- Object Oriented Programming: Inheritance
- Programming Files

C# Programming
- OOP and Creating a Simple Application
- Manipulating and Storing Data in Objects
- Program Flow Decisions and Exceptions
- Adding Methods to Objects
- Program Loops
- Arrays and Collections
- Encapsulation
- User Interface Objects
- Data Files and Persistence
- Inheritance and Polymorphism

END OF LESSONS REQUIRED FOR DIPLOMA
A+ Certification & Computer Technology

Course Description

Cleveland Institute of Electronics created a course that will train an individual with little or no computer background about computer technology. Learn how to troubleshoot PCs while preparing for the CompTIA A+ Certification exam.

A+ Certification signifies that an individual possesses the knowledge and skills needed for an entry level Computer Service Technician, as defined by experts from companies across the industry.

Course 2C includes 33 lessons with instructor support that culminates in a Diploma from Cleveland Institute of Electronics in A+ Certification and Computer Technology.

- Completion time allowed is 8 months
- Clock Hours: 540

After you complete all 33 lessons you will be prepared to take the A+ Certification exam from CompTIA and do the following:

- Troubleshoot and Maintain Computers
- Hard Drive Installation and Support
- Networking Fundamentals
- Work with Different Operating Systems
- Work with Printers, Notebooks and Memories
- Work with Multimedia Technology
- Disaster Recovery and Virus Control

Introduction to Computers

- Introduction to Computers
- The Internet and the World Wide Web
- Application Software
- The Components of the System Unit
- Input
- Output
- Storage
- Operating Systems & Utility Programs
What is A+ Certification?

The CompTIA A+ Certification is one of the most desired credentials in the Information Technology industry.

A+ Certification signifies that the certified individual possesses the knowledge and skills essential for a successful entry-level computer service technician, as defined by experts from companies across the industry.

A+ Certification is sponsored by the Computing Technology Industry Association (CompTIA) and is backed by major computer hardware and software vendors, distributors, resellers and publications.

CIE does not administer the CompTIA Certification exam. Visit www.comptia.org to find the nearest CompTIA Certification testing center.
Computer Security Specialist

Course Description
Learn how to design, install and manage computer security systems.
CIE’s Computer Security Specialist course was designed to provide the specialized knowledge required for a career in Cyber Security. This field is growing rapidly as cyber attacks on business and government servers become more common.

Master computer security techniques in an easy-to-understand format. Students learn to design and implement computer security systems and related protocols in different settings and protect networks from attack.

After you complete this program you’ll receive a Certificate along with the opportunity to prepare for the CompTIA Security+ certification.

Course 6C includes 35 lessons with instructor support that culminates in a Certificate from Cleveland Institute of Electronics.

• Completion time allowed is 8 months
• Clock Hours: 270

Learn how to:
• Identify threats to a computer network
• Address cyber terrorism, industrial espionage & encryption
• Defend against DoS attacks
• Install, design, and implement a virtual private network
• Analyze log files for network forensics
• Master concepts of firewalls and VPNs
• Use tools & techniques used by hackers
• Implement strategies to defend networks from outside attacks

Computer Security
• Introduction to Computer Security
• Networks and the Internet
• Cyber-stalking, Fraud and Abuse
• Denial-of-Service Attacks
• Malware
• Project 1
• Techniques Used by Hackers
• Industrial Espionage in Cyberspace
• Encryption
• Computer Security Software
• Project 2
Career Outlook

The demand for computer security specialists have increased in recent years as cyber attacks have become more sophisticated.

According to the U.S. Bureau of Labor Statistics (BLS), employment of information security analysts nationwide is projected to grow by 22% from 2010 through 2020, which is faster than the 14% average growth rate for all occupations.

Learn about emerging cyber security technologies and get started on a new and exciting career path!
CompTIA Network+ Certification & Computer Technology

Course Description
Learn Computer Networking with CIE’s CompTIA Network+ Course!

This course will train individuals with little or no computer networking background about computer technology and prepare them to pass the CompTIA Network+ Certification exam.

Course 3C includes 30 lessons with instructor support that culminates in a Diploma from Cleveland Institute of Electronics in Network+ Certification and Computer Technology.

• Completion time allowed is 8 months
• Clock Hours: 450

After you complete all 30 lessons you will be prepared to take the Network+ Certification test from CompTIA and do the following:

• Understand Networking Standards
• Maintain and Upgrade a Network
• Troubleshoot Network Problems
• Network with TCP/IP and the Internet
• Networking with Unix and more!

What is Network+?
The CompTIA Network+ Certification validates competency in networking administration and support.

Those holding Network+ Certification demonstrate critical knowledge of media and topologies, protocols and standards, network implementation and network support.

This certification is geared towards those with nine months experience in network administration and support.

Introduction to Computers
• Introduction to Computers
• The Internet and the World Wide Web
• Application Software
• The Components of the System Unit
• Input
• Output
• Storage
• Operating Systems & Utility Programs

Operating Systems
• Introduction to Operating Systems
• Computer Security Basics
• Desktop Virtualization
• Disk Operating System (DOS)
• Windows XP Professional
• Windows Vista and Windows 7
• Under the Windows
• Linux on the Desktop
• Mac OS X on the Desktop
• The Client Side of Networking
The CompTIA Network+ certification is a strong foundation that can be applied to a wide variety of careers in many industries. Combined with networking experience, the career options listed here are ideal for Network+ certified individuals.

- Field Support Technician (entry level)
- Network Administrator (entry level)
- Network Support Technician (entry level)

Instructor Assistance:
Contact our instructors anytime you have a question with your course work. They'll work with you one-on-one to answer your questions and provide technical assistance when needed - even if it's Saturday.

Special Note:
The instruction staff at CIE recommends that students have a solid foundation in PC Hardware and troubleshooting before taking this course. If you’re not comfortable with your PC hardware and troubleshooting skills they suggest taking CIE's A+ Certification and Computer Technology course (course 2C) as a prerequisite to the Network+ course (course 3C).
Introduction to Computers and Microsoft Office

Course Description
Learn important computer fundamentals while creating professional looking documents with Microsoft Office!
No previous computer experience is required.

This course will train individuals with little or no computer background how to run and maintain a PC and be proficient with Microsoft Office.

Gain valuable computer career skills employers are looking for without leaving your home!

Course 4C includes 30 lessons with instructor support that culminates in a Diploma from Cleveland Institute of Electronics.

Start training to become a Data Processor or Computer Assistant.

- Completion time allowed: 8 months
- Clock Hours: 450

What will you learn?
- Computer Hardware
- Software Fundamentals
- Microsoft Windows
- Microsoft Word
- Microsoft Excel
- Microsoft Access
- Microsoft Power Point
- Printers and Fonts
- Maintaining Computers
- Graphics
- Internet

Introduction to Computers
- Introduction to Computers
- The Internet and the World Wide Web
- Application Software
- The Components of the System Unit
- Input
- Output
- Storage
- Operating Systems & Utility Programs

Operating Systems
- Introduction to Operating Systems
- Computer Security Basics
- Desktop Virtualization
- Disk Operating System (DOS)
- Windows XP Professional

Introduction to Microsoft
- Word Project 1
- Word Project 2
- Word Project 3
- Excel Project 1
- Excel Project 2
- Excel Project 3
- Access Project 1

- Windows Vista and Windows 7
- Under the Windows
- Linux on the Desktop
- Mac OS X on the Desktop
- The Client Side of Networking

Access Project 2
- Access Project 3
- PowerPoint Project 1
- PowerPoint Project 2
- PowerPoint Project 3

END OF LESSONS REQUIRED FOR DIPLOMA
Introduction to Home Automation Installation

Course Description

Learn to service and troubleshoot home automated systems!

Gain valuable skills that will help you install, service and troubleshoot home automated systems like home security, audio/video, computer networks, electrical wiring, HVAC, cable and satellite.

Learn what it takes to prepare for a career in one of the fastest areas of growth in the electronics industry - Home Automation.

This introductory course does not require any previous home networking experience but by the end of the course you will have a solid foundation in home technology integration.

Gain valuable career skills employers are looking for without leaving your home! Course 5C includes 30 lessons with instructor support that culminates in a Diploma from Cleveland Institute of Electronics.

Start training to become an Electronic Home Entertainment Installer and Repairer today.

• Completion time allowed: 8 months
• Clock Hours: 450

What will you learn?

• Structured Wiring
• Home Computer Networks
• Troubleshooting Audio & Video Systems
• Home Lighting Systems
• Telecommunications
• HVAC and Water Management
• Security Systems
• Computer Hardware
• Software Fundamentals
• Operating Systems
• Programming & integrating control devices

Introduction to Computers
• Introduction to Computers
• The Internet and the World Wide Web
• Application Software
• The Components of the System Unit
• Input

Operating Systems
• Introduction to Operating Systems
• Computer Security Basics
• Desktop Virtualization
• Disk Operating System (DOS)
• Windows XP Professional
• Windows Vista and Windows 7
• Under the Windows
• Linux on the Desktop
• Mac OS X on the Desktop
• The Client Side of Networking

Digital Home Technology Integrator
• DHTI Basics
• Home Computer Networks - Install & Troubleshoot
• Distributed Audio Basics - Terminology & Components
• Distributed Audio - Install & Troubleshoot
• Distributed Video Basics - Signal & Cable Types & Satellite
• Home Communication Systems - Design, Install & Troubleshoot
• Security System Basics
• Security Systems - Design & Install
• Maintaining Home Surveillance Systems
• Home Lighting Basics
• Home Lighting Interfaces and Control Systems
• HVAC, Power Protection, Home Control Troubleshooting

END OF LESSONS REQUIRED FOR DIPLOMA
COURSE 4

Wireless & Electronic Communications

Course Description
CIE’s Wireless and Electronic Communications course was designed to provide a thorough understanding of Wireless and Personal Communications along with providing a solid core of instruction in electronics.

This program explores important theories and principles related specifically to communications, but because it does not contain any laboratory work, it is best suited to those students who already have some previous education or practical experience in electronics.

- 84 Lessons with Instructor Support
- Completion Time Allowed: 24 Months
- Clock Hours: 930
- Preparation for CET and FCC Exams

What will you learn?
- Basic Electronics
- Diagram and Schematic Reading
- Component Identification
- Digital and Data Communications
- Wireless Communications
- Digital Cellular Technology
- Radio Frequency Communications
- Fixed Wireless
- Personal Area Networks
- Local Area Networks & Wide Area Networks
- Lasers in Communications and Industry
- Communications by Fiber Optics

LESSONS
- First 36 lessons from Course 1B (see page 8)
- Simplifying Circuit Analysis by Using Kirchhoff’s Laws
- Currents and Voltages in AC Circuits
- Resonant Circuits
- Using Semiconductor Diodes
- Operation of Semiconductor Devices
- Unregulated Power Supplies
- Operation of Tubes and Transistors
- Amplifiers
- How to Work With Transistors
- Audio Amplifiers and Equipment
- Radio Frequency Amplifiers
- Oscillators
- Operational Amplifiers
- Measuring and Measuring Instruments
- Understanding and Using the Oscilloscope
- Regulated Power Supplies
- Systematic Troubleshooting
- Modern Modulation Methods
- Detection and Frequency Conversion
- Receiving Equipment
- Batteries, Control Motors, and Other Power Sources
- Frequency Modulation
- Transmission Lines and Wave Guides
- Antennas and Wave Propagation
- Transmitters
- Suppressed-Carrier Modulation and Single Sideband Transmission
- RF Amplifier Analysis
- Microwave Communications Systems
- Monochrome and Color Television
- Programmable Controllers
- FCC Review Lessons Element 1 Part 1
- FCC Review Lessons Element 1 Part 2
- Pointers and Practice for Passing FCC GC Exam Part 1
- Pointers and Practice for Passing FCC GC Exam Part 2
- Digital and Data Communications
- Lasers in Communications and Industry
- Communication by Fiber Optics
- Introduction to Wireless Communication
- How Wireless Works
- Understanding Wireless Radio Frequency Communication
- Infrared
- Bluetooth
- Low Speed Wireless Local Area Network
- High Speed WLANs and WLAN Security
- Digital Cellular Phones
- Fixed Wireless
- Wireless Communication in Business
- History of Wireless Communication and Technical Summaries

END OF LESSONS REQUIRED FOR DIPLOMA Optional Lessons at No Extra Charge:
- Associate-Level CET Study Guide
  (See page 9)
Getting off to a good start
Your education is as important to CIE as it is to you. That’s why we’ve devoted a full-time support staff to help you with everything from enrollment and tuition payment information to questions concerning lesson shipments, academic transcripts, graduation requirements... even bookstore credits!

CIE’s Student Services staff is concerned with your progress and will provide you with the immediate, personal attention you deserve.

CIE Bookstore
CD courses covering computers, robotics, satellites, fiber optics, security systems and other topics related to electronics & computer technology are available to you through the CIE Bookstore catalog.
The Bookstore catalog also includes study aids, test equipment, tools, clothing and entertainment items.
As a CIE student, you will automatically receive the catalog and may continue receiving it for as long as you wish after you graduate.

Optional Laboratory Equipment
As a student in a CIE lab course, your equipment is already included in your tuition; however, many students prefer to purchase professional-quality test equipment to use in commercial or industrial applications after graduation. To meet this need, CIE offers optional upgraded test equipment such as soldering irons, multimeters and oscilloscopes. For those students or re-enrollees who already own lab equipment, CIE offers Bookstore credit that can be applied toward any product offered in the Bookstore catalog.

Reference Library
CIE maintains a well-stocked technical reference library with a wide variety of books, magazines, trade and scientific journals available. This is the same library that is widely used by CIE’s own faculty in the preparation of your original lesson plan materials, as well as being used as a reference for editing technical material, assisting students and testing lesson experiments.

Employment Assistance
As a CIE graduate, we make sure you get a jump-start on the job market.
Need help in preparing your resume? You will be eligible to receive up to 50 professionally prepared resumes of your own to present to potential employers. And we will also provide you with an official letter of recommendation direct from the President of CIE.

On-Line Exams
You have the option of taking your exams on-line on our e-grade web site. Your graded exams will be e-mailed back to you within 24 hours. Save time and money by taking your exams on-line!

The Electron
CIE publishes its school newspaper at www.theelectron.net

Features:
Technical Information
Your Career in Electronics:
Alumni Forum:
Q and A / CIE Instructors Corner:

School Calendar:
CIE is open every Mon - Fri from 8:30 AM to 6:00 PM and Sat from 8:30 AM to 5:00 PM EST.
CIE is not open the following holidays: New Year’s Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day and Christmas Day. CIE operates a half-day from 8:30 AM to 12:00 Noon on Christmas Eve and New Year’s Eve. If a holiday falls on a Sunday, CIE will be closed on the following Monday.
Getting Started . . . Enrolling As A CIE Student

Getting started
At CIE it’s as simple as a toll free phone call (1-800-243-6446), a visit to our website (www.cie-wc.edu) or just following the instructions on your Enrollment Agreement. The sooner you get started the faster you’ll realize your career goals.

Getting Started... Enrolling as a CIE student
CIE’s Career Courses include every Diploma program. They are designed to get you started in electronics/computer technology as quickly as possible by focusing your instruction on a particular career goal.

How To Enroll
For enrollment in a CIE Career Course, all you need to do is follow the instructions on the Enrollment Agreement and submit it to CIE. Or you can enroll on-line at www.cie-wc.edu or call a CIE admissions advisor at (800) 243-6446.

You can start a course at any time of the year.

There are some areas of enrollment where you may want to be particularly careful. For instance:

- Please be sure to include the appropriate tuition payment for the course work you have selected. Payment in full, or the appropriate down payment may be made through VISA, MasterCard, Discover, American Express, CIE AutoPay, PayPal, check or money order.
- If you are not a U.S. citizen or resident, tuition must be paid in U.S. funds. Please refer to CIE’s : A Guide to Prospective Students Living Outside of the U.S.A."

Student Records
Transcripts of student grades are available. CIE will send photocopies of study records only upon a student’s written and signed request. Students may challenge the authenticity or accuracy of any item in their student record. Upon presentation of this information, CIE will judge the merit of the information and take corrective action if needed. If the student and CIE cannot reach an agreement on a contested matter, the student has the right to enter a statement into his/her student record regarding the discrepancy.

Grievance Procedure
When a student believes that there are circumstances which warrant an appeal of a grade received, the student should contact the Course Instructor. If the student does not believe the grade was appropriate, the student may request a grade change. In order to receive a grade change, the student must submit, in writing, justification to the Dean of Instruction. The written request must contain a detailed explanation of all items the student wishes to be considered.

The student will be notified of the Dean’s decision. If the student feels this decision was inappropriate, then a petition may be presented to the President of CIE whose decision will be final.

Grievances Regarding Education and Services
If a student has a problem or complaint, the student may register the problem or complaint with the President of CIE. In addition, the student can register the complaint with the State Board of Career Colleges and Schools, 30 East Broad Street, 24th Floor, Suite 2481, Columbus, Ohio 43215. Toll Free: (877) 275-4219 or local (614) 466-2752

Tuition
Please refer to CIE’s enrollment agreement, www.cie-wc.edu or page 29 of this catalog.

Open Enrollment Policy
CIE has an open enrollment policy. You should have a high school diploma or recognizable equivalent. Exceptions are made for a prospective student with previous electronics experience, or other educational skills and/or experiences indicating an ability to pass the selected course work.

CIE does not discriminate on the basis of sex, race, creed, color, age, national origin or handicap in the admission of students.

All Enrollment Applications are subject to final approval by the CIE Registrar. If your background does not appear suitable for the course work you have selected, the Registrar may recommend alternatives to you.

If you agree and are accepted, your first lesson shipment will be sent to you. If you are not accepted by CIE, all funds you may have submitted already with your Enrollment Application will be returned promptly.

Graduation Requirements
To qualify for graduation, it is necessary that a student complete all of the diploma and program requirements and maintain a 70% cumulative grade point average, or better. All financial obligations to CIE must be settled along with submitting all proper documentation before a diploma will be granted.

Financial Assistance
If you are unable to pay the full tuition amount listed on your enrollment agreement, you may be able to apply for the CIE Financing Special Education Loan. With this tuition loan plan, you could finance your education by making a down payment and monthly payments directly to CIE.
Refund Policy

You may request to cancel in any manner, but a written request is recommended. Tuition refunds will be based on the date you cancel, as follows:

1) CAREER COURSES (1A - 14B): If the student cancels within 5 calendar days after midnight of the day the student signs the Enrollment Agreement (FULL REFUND PERIOD), the student will receive a full refund with no further obligation.

2) If the student cancels after the FULL REFUND PERIOD but before the school receives the first completed lesson, the student will be charged a registration fee of 15% of the tuition or $125, whichever is less.

3) If the student cancels after the school receives the first completed lesson, the student’s tuition obligation will be a registration fee plus a portion of the remaining tuition as defined below:

<table>
<thead>
<tr>
<th>Course Title</th>
<th>Tuition</th>
<th>Down Payment</th>
<th>Total Amount</th>
<th>Finance Charge</th>
<th>APR</th>
<th>Total Payments</th>
<th>Monthly Installments</th>
<th>Final Payment</th>
</tr>
</thead>
<tbody>
<tr>
<td>A+ Certification (2C)</td>
<td>$1,425</td>
<td>$100</td>
<td>$1,325</td>
<td>$102</td>
<td>9%</td>
<td>$1,427</td>
<td>19 @ $75</td>
<td>$2</td>
</tr>
<tr>
<td>Network+ (3C)</td>
<td>$1,425</td>
<td>$100</td>
<td>$1,325</td>
<td>$102</td>
<td>9%</td>
<td>$1,427</td>
<td>19 @ $75</td>
<td>$2</td>
</tr>
<tr>
<td>Intro to Computers and MS Office (4C)</td>
<td>$1,425</td>
<td>$100</td>
<td>$1,325</td>
<td>$102</td>
<td>9%</td>
<td>$1,427</td>
<td>19 @ $75</td>
<td>$2</td>
</tr>
<tr>
<td>Home Automation (5C)</td>
<td>$1,425</td>
<td>$100</td>
<td>$1,325</td>
<td>$102</td>
<td>9%</td>
<td>$1,427</td>
<td>19 @ $75</td>
<td>$2</td>
</tr>
<tr>
<td>Computer Security Specialist (6C)</td>
<td>$1,425</td>
<td>$100</td>
<td>$1,325</td>
<td>$102</td>
<td>9%</td>
<td>$1,427</td>
<td>19 @ $75</td>
<td>$2</td>
</tr>
<tr>
<td>Computer Programming (1C)</td>
<td>$1,975</td>
<td>$75</td>
<td>$1,900</td>
<td>$188</td>
<td>9%</td>
<td>$2,163</td>
<td>25 @ $85</td>
<td>$38</td>
</tr>
<tr>
<td>Electronics Technology with FCC (1A)</td>
<td>$1,975</td>
<td>$75</td>
<td>$1,900</td>
<td>$188</td>
<td>9%</td>
<td>$2,163</td>
<td>25 @ $85</td>
<td>$38</td>
</tr>
<tr>
<td>Broadcast Engineering (2)</td>
<td>$1,975</td>
<td>$75</td>
<td>$1,900</td>
<td>$188</td>
<td>9%</td>
<td>$2,163</td>
<td>25 @ $85</td>
<td>$38</td>
</tr>
<tr>
<td>Wireless &amp; Electronic Communications (4)</td>
<td>$1,975</td>
<td>$75</td>
<td>$1,900</td>
<td>$188</td>
<td>9%</td>
<td>$2,163</td>
<td>25 @ $85</td>
<td>$38</td>
</tr>
<tr>
<td>Industrial Electronics with PLC (5)</td>
<td>$1,975</td>
<td>$75</td>
<td>$1,900</td>
<td>$188</td>
<td>9%</td>
<td>$2,163</td>
<td>25 @ $85</td>
<td>$38</td>
</tr>
<tr>
<td>Electronics Technology with Lab (1B)</td>
<td>$2,525</td>
<td>$75</td>
<td>$2,450</td>
<td>$321</td>
<td>9%</td>
<td>$2,846</td>
<td>33 @ $85</td>
<td>$41</td>
</tr>
<tr>
<td>Automation &amp; Robotics with Lab (5B)</td>
<td>$2,525</td>
<td>$75</td>
<td>$2,450</td>
<td>$321</td>
<td>9%</td>
<td>$2,846</td>
<td>33 @ $85</td>
<td>$41</td>
</tr>
<tr>
<td>Electronics Tech &amp; Advanced Troubleshooting (11)</td>
<td>$4,340</td>
<td>$100</td>
<td>$4,240</td>
<td>$883</td>
<td>9%</td>
<td>$5,223</td>
<td>52 @ $100</td>
<td>$23</td>
</tr>
<tr>
<td>Electronics Technology with Digital &amp; Microprocessor Lab (14B)</td>
<td>$4,945</td>
<td>$100</td>
<td>$4,845</td>
<td>$1,124</td>
<td>9%</td>
<td>$6,069</td>
<td>57 @ $105</td>
<td>$84</td>
</tr>
</tbody>
</table>

Refund Policy

Textbook Fees

Students who enroll in courses 1C, 2, 2C, 3C, 4, 4C, 5, 5B, 5C, 6C or 14B are responsible for purchasing a limited number of textbooks that are not included in tuition.

Please visit CIE’s website at www.cie-wc.edu/textbook_prices.aspx for a current list textbook prices, textbook titles and ISBN numbers.
The People Behind The Programs

Governing Body & Officers

John D. Drinko (In memory.)
Chairman of the Board of Directors
A.B. Marshall University
J.D. The Ohio State University
Doctor of Law (Honorary)
Marshall University
Doctor of Law (Honorary)
The Ohio State University
Doctor of Law (Honorary)
John Carroll University
Doctor of Law (Honorary)
Cleveland State University
Doctor of Law (Honorary)
Myers College
Doctor of Law (Honorary)
Baldwin-Wallace College
Doctor of Law (Honorary)
Ursuline College

Carl E. Smith (In memory.)
Founder
B.S. The Ohio State University

Paul Valvoda
Treasurer
B.A. The Ohio State University

Scott Katzenmeyer
Vice President Administration
B.S.B.A. David N. Myers University

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B.S. The Ohio State University

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Ph.D. Wayne State University

Wayne Lemons
Diploma, Cleveland Institute of Electronics

Barnaby A. Linet
B.A. Case Western Reserve University
Graduate As a Fully-Qualified Electronics or Computer Professional

Professional Certification Options

Earn a diploma from CIE and you can qualify for a professional certification from CompTIA or the International Society of Certified Electronics Technicians.

Certification enables employers to separate knowledgeable job applicants from those with less training and skills.

CompTIA A+ and Network+ Certification

CompTIA certifications are recognized as industry standards for foundation-level information technology (IT) skills.

They are one of the best ways to break into the IT field and build a solid career.

With more than 19,000 members in 89 countries, CompTIA is the leading global IT trade association with influence in many areas of the IT industry worldwide.

Certified Electronics Technician (CET) Certification

At no extra cost to you, CIE offers graduates the professional preparation they may desire to pass the Associate Level of the Certified Electronics Technician (CET) Exam administered by the International Society of Certified Electronics Technicians (ISCET).

They have over 46,000 certified technicians across the globe.

Certified Broadcast Technologist (CBT)

Graduates may be eligible to earn a Certified Broadcast Technologist (CBT) certification from the Society of Broadcast Engineers (SBE). SBE is the only organization devoted to the advancement of all levels and types of broadcast engineering.

When you graduate

CIE has the resources with its patented lessons and lab exercises to teach students the essential technical, academic and employable skills required for high-tech jobs.

CIE graduates have applied their training to numerous challenging fields from broadcast engineering to high-tech manufacturing and robotics to sophisticated new microprocessor and computer technology.

As technology continues to grow, so will the demands for highly trained electronics and computer professionals.

Graduate Options and Honors

IEEE

The Institute of Electrical and Electronics Engineers offers student membership to qualified CIE students.

The IEEE — the largest professional engineering society in the world — can also offer CIE students and members the opportunity to participate in the activities of their local chapters.
Mission Statement and Institutional Objectives and Goals

The mission of Cleveland Institute of Electronics (CIE) is to develop and deliver quality distance education programs at a reasonable cost by offering diploma-programs in the areas of electronics engineering and computer technology. CIE is committed to academic excellence and to the educational welfare of each of its students as we are a student-centered institution known since 1934 to meet or exceed the needs of its students.

The institutional objectives and goals of Cleveland Institute of Electronics for each student are to:

1) Provide the student with one-on-one instruction from a distinguished Faculty with nationally recognized credentials in the fields of Business Administration, Computer Science and Engineering.

2) Provide technology that supports and preserves the academic program and increases the effectiveness of the educational services.

3) Provide an educational delivery method that is flexible, productive and cost-effective.

4) Provide administrative support that reinforces and preserves academic and financial resources necessary to enable students to meet their educational objectives and professional goals.

5) Provide exemplary admissions, course enrollment, and student record-keeping services, and demonstrate a commitment to helping students and faculty in a friendly and timely manner.

6) Provide an increased ability to research and solve problems independently.

7) Provide recognition of the proper relationship of basic principles to the changing techniques used to implement them.

8) Achieve positions of increased responsibility within an organization through effective communication and critical thinking skills.

9) Progress through advanced degree or certificate programs or participate in continuing education in engineering, business, and/ or other professionally related fields.

10) Function as an outstanding citizen in their communities.

Grading System

CIE uses the numerical grading system for all career courses because our instructors believe it is the fairest, most helpful way to show your progress. The minimum passing grade is 70%. If you do not receive a passing grade on an examination, you will be required to review the lesson and those questions you answered incorrectly, and then re-submit the exam for that lesson. (In computing your grade average at any given time, a grade of 70% will be used on exams which have been re-submitted, regardless of final passing score.)

CIE Grading Rubric

As the majority of the examinations are multiple-choice type questions, the grading rubric is based on the number of correct questions divided by the total number of questions times 100 to show a grade percentage to the students.

As an example:
The examination has 30 questions and the number missed was 3 questions. The number of correct questions was 27 and this is divided by 30 then multiplied by 100 to give a percentage score of 90%.

CIE’s grading scale is:

<table>
<thead>
<tr>
<th>Grade</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>93 to 100</td>
</tr>
<tr>
<td>B</td>
<td>86 to 92.9</td>
</tr>
<tr>
<td>C</td>
<td>78 to 85.9</td>
</tr>
<tr>
<td>D</td>
<td>70 to 77.9</td>
</tr>
<tr>
<td>F</td>
<td>&lt; 69</td>
</tr>
</tbody>
</table>

The four-level Holistic Critical Thinking Rubric is utilized to assess the critical thinking skills that have been demonstrated by students in essays, projects, or programming exercises.

100 – 90% (4) Consistently does all or almost all of the following:
- Identifies the salient arguments (reasons and claims) pro & con.
- Thoughtfully analyzes & evaluates major alternative points of view.
- Develops & draws warranted, judicious, non-fallacious conclusions.
- Justifies key results and procedures, explains assumptions and reasons.
- Fair-mindedly follows where evidence and reasons lead.

89 – 80% (3) Does most or many of the following:
- Accurately interprets evidence, statements, graphics & questions.
- Identifies relevant arguments (reasons and claims) pro and con.
- Offers analyses & evaluations of obvious alternative points of view.
- Justifies some results or procedures, explains reasons.
- Fair mindedly follows where evidence and reasons lead.

79 – 70% (2) Does most or many of the following:
- Misinterprets evidence, statements, graphics, questions, etc.
- Fails to identify strong, relevant counter-arguments.
- Ignores or superficially evaluates obvious alternative points of view.
- Justifies few results or procedures, seldom explains reasons.
- Regardless of the evidence or reasons maintains or defends views based on self-interest or preconceptions.

69% (1) Consistently does all or almost all of the following:
- Offers biased interpretations of evidence, statements, graphics, questions, information, or the points of view of others.
- Fails to identify or hastily dismisses strong, relevant counter-arguments.
- Ignores or superficially evaluates obvious alternative points of view.
- Argues using fallacious or irrelevant reasons, and unwarranted claims.
- Regardless of the evidence or reasons, maintains or defends views based on self-interest or preconceptions.
- Exhibits close-mindedness or hostility to reason.
A Code of Conduct for the Distance Education Student

As a student of a distance education institution, you will need to observe fully the standards, rules, policies, and guidelines established by the institution, the Ohio State Board of Career Colleges and Schools, and any other appropriate organization serving an oversight role for this institution.

We ask you to adhere to high ethical standards in the pursuit of your education, and to the best of your ability:

1. Conduct yourself with professionalism, courtesy and respect for others in all of your dealings with the institution staff, faculty and other students.
2. Present your qualifications and background truthfully and accurately for admission to the institution.
3. Observe the institutional policies and rules on submitting work, taking examinations, participating in online discussions and conducting research.
4. Never turn in work that is not your own, or present another person’s ideas or scholarships as your own.
5. Never ask for, receive, or give unauthorized help on graded assignments, quizzes and examinations.
6. Never use outside books or papers that are unauthorized by your instructor’s assignments or examinations.
7. Never divulge the content of or answers to quizzes or examinations to fellow students.
8. Never improperly use, destroy, forge or alter your institution’s documents, transcripts, or other records.
9. (When applicable) Never divulge my online username or password.
10. Always observe the recommended study schedule for your program of studies.
11. Always report any violations of this Code of Conduct to the appropriate institution official, and report any evidence of cheating, plagiarism or improper conduct on the part of any student of the institution when you have direct knowledge of these activities.

Proctor Policy

CIE requires that at least one exam, typically the final exam, be taken under the supervision of a proctor for each course.

You are expected to submit to the Institute for approval the name of a proctor and their contact information.

A proctor should be a member of your community that holds a position of integrity, such as a workplace supervisor, a librarian, teacher, minister, rabbi, law enforcement officer, etc.

Restrictions Regarding Designation of Exam Proctor:

1. The proctor must be at least 18 years old
2. The proctor must not be a friend, family member, or anyone related to you by blood or marriage
3. The proctor must not be currently enrolled at CIE
4. The proctor must not reside in the same household as you
5. The proctor must not be a colleague whose work you supervise

Plagiarism/Cheating

Cleveland Institute of Electronics takes pride in the integrity of its instructional programs and the established standards for academic excellence.

Any violation of these principles will not be tolerated. Distance Learning students are expected to follow the same ethical practices required in traditional learning settings. Any deviation may be considered grounds for terminating enrollment.

Behaviors considered to be unacceptable at CIE are

1. cheating during examinations; (2) changing already graded work; (3) either soliciting a student to impersonate another by sitting for an exam; or (4) sitting for an exam in the name of another student; or (5) submitting any materials to CIE that are not the original and unchanged materials of the student.

Cleveland Institute of Electronics adheres to the commonly accepted definition of plagiarism as the action of representing another’s words or ideas as one’s own without making reference to the original author.

If it is determined by the instructors, another member of the faculty, or a CIE staff member that plagiarism or cheating is suspected, the Dean of Instruction will review the case with the Education Committee and make the final determination if the student will receive credit or not for the course or project in which the offense occurred.

If plagiarism or cheating recurs, the student’s enrollment at Cleveland Institute of Electronics may be terminated.

Procedures for Violations of Student Code of Conduct and Plagiarism/Cheating

Once notice of a violation of the student code of conduct and/or plagiarism/cheating has been submitted to the Dean of Instruction, an investigation will be conducted to determine if there is substantial evidence.

Dependent on the findings, a decision will be made by the Dean of Instruction and the Education Committee as to a student’s (a) loss of credit or (b) termination of enrollment from CIE.

Students will be notified in writing of the disciplinary decision and informed that this decision is binding. Students have the right to petition the Dean of Instruction for a stay of dismissal. The Education Committee will review each petition.

Privacy Policy/FERPA

Confidentiality of Student Records

CIE abides by the provisions of the Family Educational Rights and Privacy Act (FERPA). Under this act, education records of a student are released only with written consent and request from the eligible student, or in accordance with the law, to authorized agencies outside the college.

Student Identity Verification

Before an approved proctor can administer an exam, the student must provide a photo ID to verify their identity.
Frequently Asked Questions...

Which course should I choose?
If you are a beginner in electronics, you have two options:
A. You can enroll in Course 1B first. It is a lab course and is designed to teach you theory and to give you the skills required of an electronics technician. Upon completion of 1B you can then re-enroll into any of CIE’s other lab courses and receive 100% credit for all the work you did in Course 1B.

B. If you are sure you want to get a diploma from a more advanced course, you can enroll in that course from the start. You can enroll in 11 or 14B without taking course 1B first. This is a faster route to the advanced diploma.

If you have an interest in computer technology or computer programming you should enroll in either Course 1C, 2C, 3C, 4C, 5C or 6C. They are designed for the beginner as well as the seasoned pro.

What are the technology requirements for CIE’s courses?
Your lab equipment, study guides and other materials needed to complete our program are included with your tuition. Students should have access to the internet to take their exams, join the chat room and watch CIE videos. Students are responsible for purchasing textbooks for courses that require a textbook.

Will I need to buy textbooks?
Students who enroll in courses 1C, 2, 2C, 3C, 4C, 5, 5B, 6C, or 14B are responsible for purchasing a limited number of textbooks that are not included with tuition. Please call a Admissions Advisor at 1-800-243-6446 for the current list of textbooks or visit www.cie-wc.edu/textbook_prices.asp.

Can I upgrade my equipment?
The equipment that comes with all CIE lab courses is of good quality and is sufficient for the work done in the experiments (with the exception of the computer in Course 1C, 2C, 3C, and 4C. For students who prefer instruments with upgraded specifications, these are available through the CIE Bookstore.

Are there prerequisites for CIE’s courses?
If you intend to enroll in Course 2, 4, or 5, we recommend that you have some previous training in electronics. If you do not have any previous training, we recommend, but do not require, that you first take course 1B.

Are CIE’s credits transferrable?
Transfer credit from CIE to another educational institution is entirely at the discretion of the receiving institution, and CIE does not guarantee complete transfer of credits.

What if I need a course extension?
If you have a legitimate medical or personal reason that prevents you from studying for a period, CIE may be able to extend your course for a nominal fee. Such extensions are solely at CIE’s discretion.

What will CIE’s courses give me?
Most employers are looking for someone they can train on their equipment. They expect you to know the principles and have the skills of a technician when they hire you. That’s what CIE courses are intended to give you.

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John Randall Drinko: President and Chief Executive Officer
Paul Valvoda: Treasurer
Scott Katzenmeyer: Vice President Administration
Keith Conn: Dean of Instruction
Marites Capistrano: Licensing
Ted Sheroke: Bookstore Manager

If you have other questions or wish to enroll in a CIE program call 1-800-243-6446 www.cie-wc.edu
WE’RE HERE TO HELP YOU!

CIE prepares its students to become skilled technicians and engineering technologists who will solve the electronic engineering and computer problems of tomorrow. In order to accomplish these goals, the college retains a staff of highly trained admissions advisors, similar to a traditional school. CIE advisors are here to help you decide on a career path that is right for you. They will be more than happy to assist you with any questions you may have regarding CIE.

Some of the most frequently asked questions by prospective students are answered on page 35 of this catalog. However, you may have your own questions that are unique to your situation. Please call our admissions advisors at 1-800-243-6446 and they will be able to talk with you at length about your specific career training goals. Since a catalog may not provide all the answers to questions you may have, this individualized help from an experienced advisor may be what you need to get started on the right career path.

2 NEW COURSES!

- Automaton & Robotics with Lab (pages 6-7)
- Computer Security Specialist (pages 20-21)

Visit Our Web Site at www.cie-wc.edu
Supplemental Training is Available Through our Bookstore at www.ciebookstore.com

A SCHOOL OF THOUSANDS. A CLASS OF ONE. SINCE 1934.