Networking and Telecommunications Technology students will learn to operate, install, and repair the equipment that connects computers and networks to an ever-growing array of devices that connect you to the world.

**NETWORKING AND TELECOMMUNICATIONS TECHNOLOGY**

**Degree:** Associate in Applied Science  
**HEGIS Code:** 5510  
**Curriculum Code:** 2454  
**Campus Location:** South, Distance  
**Engineering & Technologies Division**  
**Recommended High School Courses and/or Experiences:** 3 years math, 2 years science, 2 years of Vocational Electives (Electronics/Communication Specialty) Cisco Network Academy  
**Career Opportunities/Further Education:** Networking and Telecommunications, local/wide area network support computer support; voice/video/data network support, analog and digital telephone systems, cable, television, and alarm firms.

**Program Description**

Connectivity between electronic devices has revolutionized the way that we interact with each other and the rest of the world. Modern communication depends on the equipment and delivery systems that create a variety of networks in every home, business, educational institution, hospital and plant throughout the country. These information delivery systems are vital to our lives and the economy, and Networking and Telecommunication equipment technicians are needed to keep these systems functioning properly.

The purpose of the Networking and Telecommunications Technology Program is to prepare students with the skills needed to operate, install, maintain and repair both analog and digital systems that are found in local, regional and world-wide networks. Students will work with specialized networking and telecommunications equipment employing advanced transmission methods, including wired, wireless, and fiber networks. Courses prepare students for CompTIA A+ and Cisco certifications as part of our core educational programs. We are a certified Cisco Networking Academy.

Two thirds of the credit hours required for graduation in this program are networking and telecommunications courses, with heavy emphasis on laboratory and hands-on experience. Specific networking and telecommunications courses are supplemented with over 20 hours of coursework divided among math, English and general education electives. We also place students in internships to further enhance their education.

Graduates of this program have employment opportunities as computer and network support technicians, structured cabling system installers, business telephone systems installation and support, telephone technicians, LAN/WAN support, network communications specialist, satellite/cable television technician, field service, technical help desk specialist, and technical sales representatives.
**Program Competencies**

Upon graduation with an Associate in Applied Science degree in Networking and Telecommunications Technology, the graduate will be able to:

- use the various color codes for cable and component recognition;
- be proficient at terminating wire connections using solderless-type connectors;
- demonstrate proficiency in using electronic test instrumentation, such as dual trace oscilloscopes, frequency counters, function generators and alignment generators;
- be proficient at troubleshooting half-wave, full-wave and bridge power supplies. In addition, student will be able to troubleshoot and repair voltage doublers and triplers as well as series-pass regulators;
- prototype multi-stage analog and digital circuits, check these circuits for normal operation;
- design, construct and test digital logic circuits to meet the demands of any four input logic circuits;
- analyze and troubleshoot digital systems used in the creation and transport of digital information and conversion to analog output;
- use various software packages to create documents, spreadsheets, graphs, databases and presentations;
- design voice, data, LAN and WAN telecommunications networks;
- specify cabling systems requirements for internal or external communication applications;
- demonstrate proficiency in the installation of telecommunication end-user equipment, switching and transmission equipment;
- be proficient in the use of various topologies, transmission media, network interfaces and shared resources to interconnect telecommunications networks;
- present current and emerging technologies in telecommunications to a residential or commercial client; and
- demonstrate technical proficiency in creating video content for distribution through various telecommunications channels.

Upon graduation with an Associate in Applied Science degree in Networking and Telecommunications Technology, the graduate of the traditional program option will also be able to:

- set up document, robotic, and studio color camera(s) for video production and/or teleconferencing;
- edit a short program on a linear and non-linear video editing system; and
- demonstrate an ability to accomplish with others assigned job tasks in a work environment provided by the internship program.

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**CURRICULUM**

**Total Degree Credits: 65.0**

**First Year, Fall Semester**

- **TE 101** Computer Applications in Telecommunications (3 cr)
- **TE 130** Electrical Circuits (4 cr)
- **TE 185** Network Fundamentals (3 cr)
- **EN 110** College Composition (3 cr)
- **MT 121** Technical Mathematics I (4 cr)

**First Year, Spring Semester**

- **TE 110** Intro to Telecommunications (3 cr)
- **TE 135** Electronics I (3 cr)
- **TE 145** Digital I (4 cr)
- **TE 270** Routing and Switching I (3 cr)
- **MT 122** Technical Mathematics II (4 cr)

**Second Year, Fall Semester**

- **TE 222** Television Production (4 cr)
- **TE 232** Electronics II (3 cr)
- **TE 240** Digital II (4 cr)
- **TE 271** Routing and Switching II (3 cr)
  — General Education Elective (3 cr)

**Second Year, Spring Semester**

- **TE 212** Telecommunications IV (3 cr)
- **TE 272** Accessing the WAN (3 cr)
- **TE 292** Internship (2 cr)
- **EN 111** Composition and Interpretation of Literature (3 cr)
  — General Education Elective (3 cr)

**Notes:**

Informational interviews will be arranged by the individual departments to acquaint prospective students with the program.

This is a recommended sequence. Each student should consult his or her academic adviser prior to registering. AT 220 Photography I, PH 120 Environmental Science, and/or Social Science elective are recommended to fulfill General Education requirements. As an alternative to TE 222 Television Production, additional TE 294 internships may be substituted.

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Erie Community College deplores such conduct as an abuse of authority. Allegations leading to conviction can result in suspension or termination of employment. Related inquiries should be addressed to: Title IX, ADA and Section 504 Compliance Coordinator, Darley Willis, Director of Equity and Diversity, 851-1119. 1/2017

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