



PROFESSIONAL CERTIFICATE

"Telecommunications Technology"







APT has assembled a series of courses leading to a **Certificate in Telecommunications Technologies**. This certification program consists of three core classes and two electives. *APT* courses are designed to provide the graduate a comprehensive understanding of the modern technologies used in the telecommunications industry.

The graduate can demonstrate the essential skills that are necessary to be competitive in this technical field. They learn to design, install operate and maintain modern high speed data networks on the fast track! Receive college credits, international and industry renowned certifications and Federal Communications Commission licenses. This program is a must for serious telecommunications workers interested in keeping pace with the industry and promoting their future.

PROGRAM OBJECTIVES:

- Productively contribute and interact with engineering and technical professionals in all aspects of modern voice, data and video networks.
- Properly install, maintain and troubleshoot modern voice and high speed data networks according to industry practices and standards.
- Demonstrate the understanding and describe the purpose and application of electronic components used in modern telecommunications networks.
- Confidently demonstrate hands-on skills learned by using industry standard tools and test equipment.
- Continually promote your future by completing valuable certifications, licenses, etc. while earning college credits and a valuable certification.
- Let Applied Professional Training guide the way to a successful and respectable position in telecommunications technology!

FEATURES:

- Interactive classroom instruction from highly qualified and experienced instructors.
- Custom study guides and workbooks designed for both instructional and reference use.
- Extensive hands-on lab experiences offered in most classes using the latest industry standard equipment.
- In-class optional certifications and licenses available from:
 -  Electronics Technicians Association, International
 -  Association of Communications and Electronics Schools, International
 -  Fiber Optics Association
 -  Telecommunications Industry Association
 -  Federal Communications Commission
 -  North American Board of Certified Energy Practitioners
- Be taught by the leading CWA based training provider who knows your needs.

COURSES:


CORE:

- TEL102: Basic Electronics
- TEL104: Data Communications and Networks
- TEL105: Fiber Optics

ELECTIVES (minimum 2)

- TEL107.1: Cisco Internetworking Fundamentals
- TEL115: Voice over Internet Protocol
- TEL120: Internet Protocol TV
- TEL125: Multi-Media Universal Technician
- TEL135: Data Cabling
- TEL140: Wireless Communications Technologies
- TEL150: Wireless LAN Technologies
- TEL205: Central Office Telecommunications
- TEL230: Cisco Certified Network Associate Prep
- TEL235: Advance Cisco Internetworks
- TEL240: FCC General Radiotelephone Operator License
- TEL250: Solar Power for Telecommunications

CAREER BENEFITS:

- Gain valuable knowledge and skills to actively participate in modern telecom products and services.
- Learn installation and repair techniques, applications, theory, and engineering concepts providing increased productivity and viability in this competitive industry.
- Be exposed to emerging technologies that will play an important role in future job positions.
-  APT is accredited by the **DETC** (Distance Education and Training Council).

CALL TODAY FOR MORE INFORMATION! 1-800-431-8488

www.aptc.edu



COURSE DESCRIPTIONS (See website for more information)

TEL102: Basic Electronics Series (Course includes hands-on activities)

The curriculum includes a math review, basic electronics principles and concepts, utilization of number relations and numbering systems and digital logic as related to computers and digital communication systems. Topics include Ohm's Law, power equations, electronic components, integrated circuits, AC/DC.

TEL104: Data Communications and Networks (Course includes hands-on activities)

This course covers Communications Networks, Network Connectivity, Data Representation, Digital Communications Techniques, and Basic Data Transport Concepts. Data networking concepts; transport media and standards, LAN hardware functionality, TCP/IP and signal processing are discussed in detail.

TEL105: Fiber Optics Communication (Course includes optional in-class ETA, ACES and the FOA certifications!)

This comprehensive course includes theory, applications, standards with extensive hands-on splicing, epoxy connectors and testing lab experience. The curriculum covers how voice, data and video signals are composed, multiplexed and transmitted over fiber optic systems. Major topics include optical fiber construction, PONs and FTTx architectures, Total Internal Reflection, Optical light sources, optical modulation and multiplexing, and the SONET Standard.

TEL107.1: Cisco-Internetworking Fundamentals (Course includes hands-on activities)

This course provides the student with key internetworking knowledge, skills and abilities that posture the student for success in Cisco production environments. The course also provides foundational exposure to core objectives centered in the Cisco 640-822 ICND1 and Cisco 640-802 CCNA certification exam paths. The Cisco Internetworking Fundamentals course builds a foundation that the student can leverage to develop sound core knowledge and command line interface experience. The Cisco Internetworking Fundamentals curriculum utilizes Cisco approved tactics, techniques and procedures to develop core internetworking knowledge and introduce the student to basic analytical, troubleshooting and configuration skills in a simulated internetwork.

TEL115: Voice Over Internet Protocol (Course includes extensive hands-on activities and optional in-class ETA and or TIA CTP certification.)

Get an in-depth understanding of IP based networks. Primary topics include LAN architecture, TCP/IP Protocols, SIP messaging Protocol, Real Time Protocol (RTP) network integration, function and configuration of network elements (such as Proxy servers and VoIP Gateways) and end user devices (such as IP phones, Analog Telephone Adapters, and Soft Phones). Various technical and regulatory challenges between IP Networks and "Toil Quality" Circuit Switched networks are discussed. Plus discussions of competitive technologies such as traditional dedicated voice services, VoATM, and Wireless alternatives.

TEL120: Internet Protocol Television (IP-TV) (Course includes interactive demonstrations.)

Get an in-depth understanding of emerging IP Centric Services over Broadband Networks including IPTV, VoIP, IMS and Network Architecture. Individuals with some previous data communications knowledge such as TCP/IP, principals of digital communications, or fiber optics will gain additional insight about how those technologies play a vital role in IPTV and other future services.

TEL125: Multi-Media Universal Technician (Course includes extensive hands-on activities and optional in-class ETA's RESI certification.)

Course covers structured wiring in residential installations using TIA/EIA 570A standards. These concepts include fiber optics (FTTX, FTTP), Wireline (DSL, twisted pair), Coax Cable (CATV), and Satellite. Multimedia content types (HDTV, SDTV, Internet, Telephony, Security and others) are discussed. General OSHA safety procedures and Low Voltage National Electric Code (NEC) rules and regulations are covered.

TEL135: Data Cabling (Course includes extensive hands-on activities and optional in-class ETA and ACES certification.)

Course provides excellent experience in basic Telephone, Video, CableTV and Data Network installations. The student learns basic theory, installation requirements, industry standards and proper cabling documentation. The course covers configurations used in inside and outside plant facilities. The electrical and mechanical characteristics of twisted pair and coax cable are discussed.

TEL140: Wireless Communication Technology (Course includes extensive hands-on activities.)

This course provides a fundamental understanding of modern wireless communications technologies and equipment for both voice and data. This course covers fixed wireless applications, such as Wireless LANs, Local and Metropolitan Multipoint Distribution Systems, PCS, cellular phone technology, wireless PDA's one and two-way pagers, etc. It covers popular protocols such as, Frequency Hopping Spread Spectrum, Direct Sequence Spread Spectrum, Time Division, Bluetooth, IrDA, RFID, 802.11a/b/g/n, WiMAX, 3G, etc.

TEL150: Wireless LAN Technologies (Course includes extensive hands-on activities.)

This course provides students with an introduction to wireless local area network (WLAN) technology that is impacting every sector of our interconnected world today. This course will help students develop core knowledge entered in WLAN standards and a conceptual understanding of the design, communication and components that enable WLANs.

TEL205: Central Office Telecommunications (Course includes extensive hands-on activities.)

The student gets a comprehensive overview of how data and voice services work through the central office and outside plant infrastructure, with emphasis on the Central Office. Major equipment (i.e. class 4 & 5 switches, ATM & Frame Relay, DSLAMs, T1 Channel Bank, DSX, Office Repeaters, Network Interface Units, etc.) used in the CO to provide Data and Voice services, transmission media (i.e. fiber optics, coax, twisted pair, etc.), transport services and testing plus wiring practices/concepts are covered. Basic regulatory terminology and regulations are discussed.

TEL240: FCC General Radiotelephone Operator License Training (APT administers actual FCC licensing exams in the course!)

This course provides a valuable insight into wireless radiotelephone communications fundamentals including rules & regulations, basic radio circuits, antenna theory and wave propagation characteristics. The license is required by most aviation, communications and maritime companies and organizations to maintain and operate radio communications equipment.

TEL230: Cisco Certified Network Administrator Preparation (Course includes extensive hands-on activities.)

This course provides students with the knowledge required to become a Cisco Certified Network Associate as described by the new Cisco 640-802 CCNA exam. The CCNA Certification Preparation course covers the extensive body of CCNA knowledge in six blocks of instruction. See website for more details.

TEL235: Advanced Cisco Internetworks (Course includes extensive hands-on activities.)

This series of classes develops the student's analytical skills required of a Cisco Certified Network Associate as described by the new Cisco 640-802 CCNA exam using hands-on lab simulators. See website for more details.

TEL250: Solar Power for Telecommunications (Course includes extensive hands-on activities.)

This course provides students with a working knowledge of Solar Photo Voltaic (PV) systems used in the telecommunications industry. This course is for individuals wanting to gain an in depth knowledge of PV systems, design techniques, equipment module functionality as well as installation requirements and practical grid-tie and off grid battery interconnection methods.