Available Electronic Certifications

Certifications Galore

There are literally dozens of electronic certifications. Some are generic and cover electronic and related fundamentals. Others are specialized to a particular field such as communications, computer, or industrial.

The most useful ones are probably the specialized certifications as they can lead to a job more quickly. These usually require a minimum of job experience. The generic certifications are great for entry level candidates with little or no experience.

The generic certifications are also open to anyone even if they do not have a degree or other educational qualifications. This is a good way for a very knowledgeable and competent technician to prove his or her qualifications by obtaining one or more certifications.

A sampling of the most popular electronic certifications is given in the next few slides. For more information on any of the certifications, go to the website listed.

General Radiotelephone Operators License

The General Radiotelephone Operators License (GROL) is one of the oldest and most widely accepted credentials in electronics. It is a license rather than a certification. The two are similar in that an exam must be passed. In the case of the license, a government agency is granting the holder of this license permission to install, service, maintain, and operate certain types of critical radio communications equipment. In the case of the GROL, the agency is the Federal Communications Commission (FCC). Specifically, most marine and aircraft radios, radar, and other communications equipment must only be serviced by a licensed person.

The GROL is issued when a person passes a two part exam consisting of radio law and electronics/ radio theory and practice. It is a rigorous exam at the technician level.

GROL

While the GROL is required by the marine and aircraft industries, it is not required for other areas of radio communications such as radio or TV broadcast or 2-way mobile radio. However, many employers in communications use the license as a screening device in hiring. Cell phone companies, railroads, oil companies and many others like individuals to have this credential as it does clearly indicate an excellent level of knowledge of radio techniques.

Information on the GROL

The FCC also offers the Radar Endorsement and the Global Maritime Distress and Safety System (GMDSS) Endorsement for those working in the marine fields.

For more information, go to the FCC website www.fcc.gov and find additional information about the GROL. If you plan to work in the field of wireless, this is one of the best credentials to hold.

Select the option Obtaining Licenses under the heading Consumer Center on the left menu. Then select Commercial Radio Licenses and explore these pages.

Broadcast Electronics Certification

Radio and TV broadcasting is still a major career opportunity for those interested in the electronics of radio, audio, video, and satellites. The FCC used to have a license for those entering this field but dropped the license requirements a number of years ago. However, because broadcasting has become far more complex, a source of qualified persons is difficult to find. This problem is addressed by the Society of Broadcast Engineers (SBE). SBE offers eleven certifications in radio, audio, television, and related specializations for those entering this field. Some of the certifications can be partially met with an FCC GROL but others require different levels of education and experience plus related exams.

To learn more about this exciting field, go to www.sbe.org.

NICET

The National Institute for Certification in Engineering Technologies (NICET) is one of the oldest, if not the oldest, organization certifying technicians. It is a division of the National Society of Professional Engineers (NSPE), an organization of professional association of licensed professional engineers.

NICET came about when the industry had a large population of engineering technicians who assisted engineers in design and development. Today, there are very few engineering techs in electronics. Thanks to integrated circuits as well as simulation and design software, few if any engineering techs are needed today. They still exist, of course, but in electronics their number has faded making it a poor career choice.

Current NICET Certifications

Because of the lack of interest in their engineering technician certification, NICET has dropped it as of the end of this year. However, NICET has created several newer certifications that are growing and popular.

NICET currently offers several specialized electronic certifications. These are:

Video Security Systems: Technician and designer

Fire Alarm Systems

Low Voltage Communications: Audio

Industrial Instrumentation

NICET Certifications

With security such a major factor today, the video (closed circuit TV) systems certifications have become popular because specific knowledge and skills are needed to design, install, and service these systems. The same goes for the fire alarm systems which are in effect electronic monitoring and controls. Competency is essential in any of the critical systems.

The audio certification is for those installers of high power public address systems and any communications by wire such as phones, intercoms, music systems, etc.

Industrial instrumentation covers monitoring and control systems in manufacturing and process control.

For full details, go to www.nicet.org.

Biomedical Certifications

Another critical area generally requiring certification is biomedical instrumentation. Those who work on medical instruments and equipment absolutely must be competent to avoid harm to patients and to medical personnel using the equipment as well as to insure the accuracy of measurement and diagnosis.

This certification is handled by the Association for the Advancement of Medical Instrumentation (AAMI). They offer three certifications for biomedical equipment technicians: the generic biomedical electronic technician (BMET), radiology equipment specialists (CRES), and clinical laboratory equipment specialists (CLES). All require specific education and experience qualifications in addition to an exam.

Some of the highest paid technicians are those in the biomedical fields and certification is the primary path to those jobs.

Marine Electronics Certification

The National Marine Electronics Association (NMEA) sponsors the Certified Marine Electronics Technicians (CMET) program. Its goal is to ensure a high quality of installation and service in marine electronics equipment. Such equipment includes radios, radar, navigation (GPS, Loran, etc), autopilots, depth sounders/sonar, and emergency beacons. Given the critical nature of marine electronics and its implications for safety of life and property, certification is a positive credential.

Levels of Certification

There are four levels of CMET certification.

The entry level requires an FCC GROL with a Radar Endorsement plus one year of relevant experience. For those working in this field, the CMET credential can help in obtaining a job and advancement on the job.

For details go to www.nmea.org.

Generic Electronic Certifications

There are two organizations that provide generic entry level certifications for electronic technicians. They are the Electronic Technicians Association International (ETA-I) and the Institute for the Certification of Electronic Technicians (ISCET).

Both offer an entry, or Associate, level of certification for those with no experience and a Journeyman level for those with four or more years of experience in a specialty. Both require an exam.

In addition to being tested on electronic fundamentals and general knowledge, these organizations also offer certification in one or more electronic specialties.

ETA-I

Electronic Technicians Association International has an Associate level entry exam and a Journeyman exam for basic certification. They also offer a wide range of specialty certifications including:

Appliance Service

Computer Service and Networking

Consumer Electronics Service

Customer Service Specialist

Fiber Optic Cabling

Satellite Systems

Telecommunications

Wireless Communications

ETA-I also serves as a professional association for those who are certified. They sponsor regular publications and annual conferences. For more information the website is http://www.eta-i.org/.

ISCET

The Institute for the Certification of Electronic Technicians certifications have been around since the early 1970s. Tens of thousands of technicians have been certified at the Associate and Journeyman levels.

Certification specialties offered include:

Audio

Communications

Computer

Consumer

Industrial

Medical

Radar

Video

For more information, go to www.iscet.org.

Cabling Certification

Technicians are always running cables, installing connectors, troubleshooting networks and other wiring, and working with existing or new cabling.

An organization specializing in cabling certification is the Building Industry Consulting Services International (BICSI). They refer to their certifications as registrations.

They offer several levels of registration. The highest level is called Registered Communications Distribution Designer (RCDD). There are three variations: Transport Systems Specialist for LAN wiring, Outside Plant Specialist, and Wireless Design Specialist.

Other certifications include three levels of Commercial Wiring Installer and Technician.

Certification Information

The wiring and cabling industry is huge and growing. It is a career in itself. Certification is the key to the better positions. Vendor certifications are also available.

For details. go to www.bicsi.org.

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Mobile Electronics Certification

Mobile electronics refers to any electronic equipment installed in cars, trucks, or RVs. There is a huge aftermarket in audio, radio, alarms, and other mobile equipment. Because of the complexity of automotive electrical systems and the potential for damage and unsafe conditions, the Consumer Electronics Association offers the Mobile Electronics Certified Professional (MECP) Program. It requires an exam to ensure that a person is familiar with 12 volt auto electrical systems and the techniques of installing auto sound systems, alarms, satellite radios, GPS navigation systems, and TV sets.

For more information, go to www.ce.org and look up MECP under Training.

Radio and Telecommunications Certification

One of the most comprehensive certifications in the radio communications field is that offered by the National Association of Radio and Telecommunications Engineers (NARTE). They offer a wide range of programs in various radio and wireless specialties. Their main certificates are generic covering all radio, telecommunications, telegraph, cable, telephone, and television at both the technician and engineering level.

They also offer specialty certifications in unlicensed wireless system installation (LANs, hot spots, etc.), electromagnetic compatibility and electromagnetic interference (EMC/EMI), and electrostatic discharge (ESD).

All of NARTE's certifications require a minimum number of years of experience in the industry.

Details are at www.narte.org.

Cable Television Certification

Cable television is a huge industry and offers many jobs and career opportunity for technicians. Cable TV systems are complex since they supply standard TV via cable as well as advanced digital and HDTV, broadband Internet connections, and voice over Internet protocol (VoIP) telephone service. It involves both coax and fiber optic cable installation and maintenance a broad mix of both communications and computer technologies.

SCTE Certification

The Society of Cable Telecommunications Engineers (SCTE) offers multiple certification programs at both the technician and engineering levels. Their broadbased generic certifications are called Broadband Communications Technician and Broadband Communications Engineer.

Some of the certifications offered include:
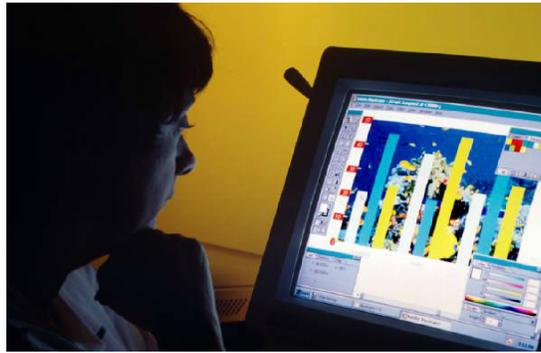
Broadband Distribution Specialist

Broadband Premises Specialist

Broadband TelecomCenter Specialist

Broadband Transport Specialist

Go to www.scte.org for more details.

Computer Certifications

There are probably more computer certifications than any other type. The huge personal computer and networking industries sponsor many generic independent and vendor certifications to help train and prepare the many technicians working in this field.

While most electronic certification programs predate computer certifications, the computer certifications are far more widely held, known, and recognized. Since electronic technicians are always involved with PCs and usually in networking, it is advantageous to have at least one or more generic computer certifications.

CompTIA Certifications

The most widely recognized source of such certifications is the Computing Technology Industry Association (CompTIA).

CompTIA offers a wide range of certifications in computer and networking technologies. The most well known is the A+ program which certifies a person in basic PC operation and servicing. It covers both hardware and software and provides a person with basic PC installation, troubleshooting, and maintenance skills. It is highly recommended for all electronic technicians.

The Network+ certification is another popular credential focusing on computer networking. It is generic and useful for anyone working with local area networks (LANs) and the Internet.

Home Technology Integration

The Home Technology Integration (HTI+) certification is a newer certification that ensures competency in the installation, integration, and troubleshooting of home electronic equipment and systems including home security, audio/video, PC networks, electrical wiring, HVAC, cable/satellite, broadband, telephone, and structured wiring.

Get more details on these and other certifications at www.comptia.org.

Automation and Control Certification

If your job interests are in the field of instrumentation, automation, and control, then the Certified Control Systems Technician (CCST) may be for you. It is sponsored by the Instrumentation, Systems, and Automation (ISA) society. The certification is designed for those working in process control plants, manufacturing, and related jobs where instrumentation and closed loop control practices are widely used.

CCST

The CCST program has three levels based on education level and years of experience. A comprehensive exam covers all aspects of calibration, loop checking, troubleshooting, start-up, maintenance, and repair.

Another ISA certification is the Certified Industrial Maintenance Mechanic (CIMM) credential designed for those who primarily perform maintenance on electromechanical systems.

ISA offers several other certifications for engineering level jobs. Go to www.isa.org.

Manufacturing Certification

A popular and widely accepted certification in manufacturing is the Certified Manufacturing Technologist (CMfgT) credential. It is offered by the Society of Manufacturing Engineers (SME). It covers all areas of manufacturing including materials, manufacturing processes, automation, quality control, and computer related topics.

SME has several other more advanced and specialized certifications. Go to www.sme.org.

Fiber Optic Certification

With major growth in the Internet, passive optical networks (PONs) and other long haul wide area and metro networks, fiber optics has become a major employment opportunity. Specialized knowledge and skills are needed to work in this field and an appropriate certification is a key to entry. One such certification is that offered by the Fiber Optic Association (FOA).

There are two certifications levels available: Certified Fiber Optic Technician (CFOT) and Certified Fiber Optic Specialist (CFOS). The CFOT is the entry level credential requiring one year of related experience and an exam. It covers fiber optic basic theory and application. The CFOS is a more advanced certifications that focuses more on splicing, connectors and testing. Training materials and classes are available.

For more details, go to www.thefoa.org.

Computer Telephony Certification

Computer telephony is the designation to today's modern telephone systems which are virtually all computer-based. Such systems include PBXs, interactive voice response systems, voice over Internet protocol (VoIP), and other combined data and voice networks.

A certification for this field is the Computer Telephony Engineer (CTE) certification offered by the Computer Telephony Institute (CTI).

For more details, send an email to cteprogram@ctinstitute.com.

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