



Electrical Systems

CERTIFICATE / ASSOCIATE DEGREE



The field of electrical systems and instrumentation technology at Great Basin College prepares electricians and electrical instrumentation technicians for the twenty-first century. Each program meets important industry demands. The unique combination of electrical and instrumentation training provides a wide variety of employment opportunities in some of the most highly sought after technical fields in today's job market.

About Electrical Systems Technology

Electrical systems technology graduates have the skills to install, maintain, test, troubleshoot, repair and replace high-tech electrical systems and controls in modern industrial environments and commercial buildings; modify and expand existing electrical systems; work in diverse industries including mining, manufacturing, power plants, power distribution, construction, sales, machine control, water resource management, gaming and renewable energy. When preparing for a career in this field, the following courses and aptitudes are helpful to those entering the Electrical Systems Technology Program: basic oral and written communication skills, mathematics skills, physical science aptitude, hand/eye coordination, mechanical aptitude, a good work ethic and a desire to excel. Students can earn either an Associate of Applied Science degree or a Certificate of Achievement in just 48 weeks. From there, students can continue with instrumentation technology and earn a Certificate of Achievement. Electrical technology technicians' skills positions in the trade job market.

Areas of Study

- AC/DC Theory
- Voice Video and Data
- Electrical Estimating
- Solid State/Digital Concepts
- Motor Controls
- Distribution Systems
- National Electric Code
- Programmable Logic Controllers
- Raceway Systems
- Test Equipment Basics
- Electrical Safety
- Tool and Material Use
- Hands-on Applications
- Electrical Design and Troubleshooting Techniques
- State-of-the-art Devices/Equipment
- Prints and Wiring Diagrams
- Renewable Energy

About Instrumentation Technology

Instrumentation technicians work in the heart of industrial automation, specifically in the measurement and automatic control of hydraulic, pneumatic, electronic, electrical and mechanical processes used in industrial operations. Instrumentation has become an increasingly important tool in the new world of industrial automation.

Instrumentation technology graduates have the entry-level skills necessary to enter the workplace as electrical and instrumentation technicians in mining, petro-chemical, pharmaceutical, food, paper, manufacturing and nuclear industries.



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Entrance into the Instrumentation Technology Program requires successful completion of the 48-week Electrical Systems Technology Program or instructor approval. Instrumentation builds upon the knowledge learned in the first year, leading students to an understanding of how physical processes work in a practical and meaningful way. Students learn to combine physical and electrical/electronic processes into electro-mechanical control systems to improve productivity, efficiency and quality. Familiarity with data transmission and communications skills utilizing "smart" devices such as PLCs and DCS are also covered. Graduates in this field will be on the cutting edge of technology using personal computers as intelligent controllers with peripheral hardware and required software to interface with the industrial environment. These technicians receive salary considerations that are among the highest scales available in any of the technology trades.

Areas of Study

- Physical principles of flow, level, pressure and temperature processes
- Measurement technology for each process
- Fundamentals of process control (the methodology of using measurements, through a feedback control loop to automate industrial processes)

MTC Scholarship Program

The Maintenance Training Cooperative, Inc. (MTC), a group of industrial-related employers, has made possible a special career and scholarship opportunity for our students. MTC sponsors a number of \$5,000 scholarships that go toward costs of tuition, fees and books for the fast-paced, 48-week Associate of Applied Science degree program. Paid on-the-job work experience is also possible with Nevada mining companies, their suppliers and equipment vendors.

Distinctive Features

- Fast-paced, 48-week program
- 80 percent of our graduates are hired within three months of graduation
- Associate of Applied Science in Electrical Systems Technology
- Certificate of Achievement in Electrical Systems Technology
- Certificate of Achievement in Instrumentation Technology
- MTC Scholarships available
- The Post-Associate Instrumentation Certificate is a core technology in the Bachelor of Applied Science



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Great Basin College (GBC) does not discriminate on the basis of race, religion, color, age, sex, sexual orientation, military status, disability, national origin, gender identity or expression, or genetic information. For inquiries, 775.738.8493.