

Associate of Applied Science - Electrical & Instrumentation Technology

Program Description

The Electrical & Instrumentation Technology degree is designed to prepare students for positions in the installation, repair and maintenance of commercial electrical and electronic equipment.

Note: Freeport McMoRan, Inc. and Asarco sponsor mining programs designed to prepare students for direct employment in the mining industry. There are special admission requirements for these programs. Call (928) 776-2002 for details.

Program Contacts

- Instructional Specialist: Susie Check (susie.check@yc.edu), telephone: (928) 717-7761
- Dean: John Morgan (john.morgan@yc.edu), telephone: (928) 717-7721

Program Outcomes

Upon successful completion of the Electrical and Instrumentation Technology Degree program, the learner will be able to:

1. Build, test, analyze and troubleshoot direct and alternating current circuits. (ELT 111, ELT 112)
2. Build, test, analyze and troubleshoot digital circuits. (ELT 183)
3. Build, test, analyze and troubleshoot solid state circuits. (ELT 126)
4. Build, test, analyze and troubleshoot microprocessor and programmable controller-based circuits. (ELT 161)
5. Build, test, analyze and troubleshoot process control instrumentation circuits. (EL 171)
6. Design, fabricate and install safe electrical conduits and raceways. (ELT 115)
7. Build, test, analyze and troubleshoot communication circuits. (ELT 221)
8. Build, test, analyze and troubleshoot motors and motor control circuits. (ELT 272)
9. Troubleshoot pre-bugged equipment including symptom recognition, fault isolation and repair (ELT 258)

Program Requirements

A minimum of 60 credit hours is required to complete the Electrical and Instrumentation Technology Degree.

| Course | Course Title | Credit Hours |
|--|--------------------------------|--------------|
| I. General Education | | |
| A. Foundation Studies (12 credits) | | |
| 1. College Composition or Applied Communication - Select Option a or b: | | |
| a. Writing (6 credits) | | |
| Choose two courses from approved list | | |
| b. Writing AND Communication (6 credits) | | |
| Choose one course from each list | | |
| 2. Numeracy (3 credits) | | |
| 3. Critical Thinking (3 credits) | | |
| B. Area Studies (7 credits) | | |
| 1. Physical and Biological Science (4 credits) | | |
| 2. Behavioral OR Social Science (3 credits) | | |
| Choose one course from either list | | |
| II. General Requirements - 21 credits | | |
| AGS101 | Microcomputers in Agriculture | 3 |
| OR | CSA126 Microsoft Office | 3 |
| ELT111 | DC Electrical Systems | 3 |
| ELT112 | AC Electrical Systems | 3 |
| ELT115 | Conduits and Raceways | 1 |
| ELT126 | Solid State Devices | 3 |
| ELT161 | Microprocessors & Prog Control | 3 |

| Course | Course Title | Credit Hours | |
|--|--------------------------------|-----------------------------|---|
| ELT183 | Digital Circuits | 3 | |
| MET160 | Basic Machine Hydr& Pneumatics | 2 | |
| III. Concentrations - Select A, B, or C: | | | |
| A. Electrical & Instrumentation Technology Concentration - 20 credits | | | |
| ELT171 | Process Control Instrumentatn | 3 | |
| ELT221 | Communication Systems/Circuits | 3 | |
| ELT258 | Electronic Troubleshooting | 2 | |
| ELT272 | Motors and Motor Controls | 3 | |
| Select at least 9 credits from the following courses: | | | |
| CNT100 | Intro to Computer Networking | 3 | |
| CNT110 | A+ Comp Tech Certification | 4 | |
| CNT115 | Network+: Networking Tech Cert | 4 | |
| CSA170 | PC Architecture | 3 | |
| ELT130 | Introduction to Robotics | 3 | |
| ELT141 | Electrical Apparatus | 4 | |
| ELT296 | Internship: Electrical Tech | 3 | |
| PHY140 | The Physical World | 4 | |
| WLD113 | Basic Welding II | 2 | |
| B. Mining Concentration - 27 credits | | | |
| ELT171 | Process Control Instrumentatn | 3 | |
| ELT221 | Communication Systems/Circuits | 3 | |
| ELT258 | Electronic Troubleshooting | 2 | |
| ELT272 | Motors and Motor Controls | 3 | |
| ELT295 | Apprentice: Electrical Inst | 3 | |
| AND | ELT295 | Apprentice: Electrical Inst | 3 |
| AND | ELT295 | Apprentice: Electrical Inst | 3 |
| AND | ELT295 | Apprentice: Electrical Inst | 3 |
| MET116 | Rigging | 1 | |
| MET150 | Surface Mine Safety Training | 1 | |
| WLD113 | Basic Welding II | 2 | |
| C. Lineworker Concentration - 26 credits | | | |
| CPD104 | Career & Personal Development | 3 | |
| ELT141 | Electrical Apparatus | 4 | |
| ELT201 | Introduction to Linework I | 2 | |
| ELT202 | Field Training I (Lineworker) | 6 | |
| ELT211 | Introduction to Linework II | 2 | |
| ELT212 | Field Training II (Lineworker) | 6 | |
| PPT120 | Energy Industry Fundamentals | 3 | |