

This program prepares you for the many career opportunities in the electrical industry. A thorough treatment of DC, AC, and polyphase electric circuits and solid-state power devices minimizes the possibility of technological obsolescence. Motor controls and programmable controllers let you design and build control systems. The electrical installation courses use the latest techniques according to the National Electrical Code. The electrical code and fire alarm classes are especially useful as preparation for NICET (National Institute for Certification in Engineering Technologies) state license and certification examinations. This program is excellent for electricians, engineers, firefighters, building department inspectors, and maintenance personnel because it uses an extensive lab environment for important, hands-on experience in electrical classes. For advising, please call 303.914.6509.

Bachelor of Science transfer program: All Construction Technology associate of applied science graduates are eligible to participate in the Colorado Community College Pathways program, a strategic partnership between DeVry University – Colorado and Red Rocks Community College. Students may transfer 80+ credit hours from Red Rocks Community College to DeVry University and complete a bachelor of science in Technical Management in as few as two semesters. Contact your Construction Technology advisor for details.

Related course work may be found under:

Air Conditioning, Heating and Refrigeration, Construction Technology, Industrial Maintenance Technology, Process Technology, and Renewable Energy Technology.

Degrees: Associate of Applied Science

- Construction Electrician
- Maintenance Electrician
- Fire Protection Technology
- Construction Electrician/IBEW/NECA
- Power Technology
- Industrial Control & Instrumentation Technology

Certificates:

- Electrical Installation
- National Electrical Code
- Electrical Codes and Standards
- Residential Construction Electrician
- Construction Electrician
- Advanced Construction Electrician
- Maintenance Electrician
- Introduction to Instrumentation and Controls Technician
- Advanced Instrumentation and Controls Technician

- Advanced Maintenance Electrician
- Fire Alarm Code
- Introduction to Fire Alarm Technician
- Fire Alarm and Detection Technician
- Post-Degree Specialization for Advanced Fire Code
- Post-Degree Specialization for Advanced Construction Electrician
- Post-Degree Specialization for Advanced Maintenance Electrician

AAS Degree

Construction Electrician

This degree can eliminate up to one year of apprenticeship hours required by the State of Colorado to become a licensed electrician.

Required Courses	Credits
EIC 100 Electrical Construction and Planning	4
EIC 110 Electrical Installations I	4
EIC 120 Electrical Installations II	4
EIC 130 National Electrical Code I	4
EIC 135 National Electrical Code II	4
EIC 150 DC Circuit Fundamentals	4
EIC 155 AC Circuit Fundamentals	4
Required Credits	28
Elective Courses (Choose from list below)	18
EIC 102, 124, 125, 160, 167, 169, 211, 217, 220, 240, AEC 221, CIS 118, CON 230. Other courses as approved by Electrical Department Advisor.	
General Education Courses (See AAS Degree Requirements page 24)	15
Total Credits	61

AAS Degree

Maintenance Electrician

This degree can eliminate up to one year of apprenticeship hours required by the State of Colorado to become a licensed electrician.

Required Courses	Credits
EIC 110 Electrical Installations I	4
EIC 120 Electrical Installations II	4
EIC 150 DC Fundamentals	4
EIC 155 AC Circuit Fundamentals	4
EIC 167 Electrical Maintenance	4
EIC 130 National Electrical Code I	4
EIC 220 Industrial Controls	4
EIC 225 Programmable Controllers	4
Required Credits	32
Elective Courses (Choose from list below)	14
EIC 100, 102, 124, 125, 135, 150, 155, 160, 168, 169, 211, 217, 226, 230, 233, 240, AEC 221, CIS 118, CON 230. Other courses as approved by Electrical Department Advisor.	
General Education Courses (See AAS Degree Requirements page 24)	15
Total Credits	61

AAS Degree

Fire Protection Technology

This degree prepares you for entry into a career in fire alarm systems design, fire alarm systems technician, or fire sprinkler systems design. This degree is also useful for anyone working for building or fire departments and conducting plan review or inspections. Emphasis is placed on the latest technologies in accordance with national and local fire codes. Preparation for NICET (National Institute for Certification in Engineering Technologies) certification in fire alarm systems levels I, II, III and IV is included in the program.

Required Courses	Credits
EIC 110 Electrical Installations I	4
EIC 120 Electrical Installations II	4
EIC 130 National Electrical Code I	4
EIC 135 National Electrical Code II	4
EIC 150 DC Circuit Fundamentals	4
EIC 240 Fire Alarm Fundamentals	4
EIC 241 Fire Alarm Systems	4
EIC 242 National Fire Alarm Code	4
Required Credits	32
Elective Courses (Choose from list below)	14
EIC 100, 102, 124, 125, 155, 160, 168, 169, 211, 217, 220, 226, 230, 233, 240, AEC 221, CIS 118, CON 105, 230, 245 FST 204. Other courses as approved by Electrical Department Advisor.	
General Education Courses (See AAS Degree Requirements page 24)	15
Total Credits	61

AAS Degree

Construction Electrician/IBEW/NECA

Combine your four or five years of apprenticeship with general education classes at RRCC for an associate of applied science degree via an articulation agreement between IBEW/NECA and RRCC.

The objective of the program is to allow members who have served their apprenticeship program through the National Joint Apprenticeship (NJATC) to earn associate's degrees. This program allows you to combine your excellent trade skills with your academic skills. Upon completion of the IBEW/NECA NJATC apprenticeship program, RRCC will grant 43 credits toward an AAS degree. The degree requires a total of 61 credits, of which 18 must be taken at RRCC or through RRCC Online. You must show proof of completion of IBEW/NECA Wireman or Outside Lineman NJATC programs.

Consult with a Construction Technology advisor for details.

AAS Degree

Power Technology

This associate of applied science degree is available for **only those who have completed or are currently enrolled in a power utility based apprenticeship**. RRCC's Construction Technology Electrical Program will grant 43 college credits toward an AAS degree. The degree requires a total of 61 credits, of which 18 must be taken at RRCC or through RRCC Online. By using your apprentice training and taking only six additional classes, you may obtain a degree online, at home, and at times of your choosing. Consult with a Construction Technology advisor for details.

Emphasis determined by the apprenticeship program completed:

- Line Technician
- Substation Electrician
- Meter Specialist
- Apparatus Electrician
- Instrument and Control Specialist
- Electrician Specialist
- Mechanic Specialist
- Power Plant Operator
- Field Engineering Specialist
- Relay and Control Specialist
- Utility Engineering Standards Specialist Tech

AAS Degree

Industrial Control & Instrumentation Technology

Required Courses	Credits
EIC 124 Electrical Safety	1
EIC 130 National Electrical Code I	4
EIC 150 DC Fundamentals	4
EIC 155 AC Circuit Fundamentals	4
EIC 160 Electrical Instruments and Measurements	4
EIC 167 Electrical Maintenance	4
EIC 220 Industrial Electrical Controls	4
EIC 222 Instrument. & Process Controls I	4
EIC xxx Advanced Industrial Controls	4
EIC 225 Programmable Controllers	4
EIC 226 Programmable Controls Advanced	4
EIC 230 Instrumentation & Controls II	4
Required Credits	45
General Education Courses (See AAS Degree Requirements page 24)	15
Total Credits	60

Certificate

Relating to AAS/Construction Electrician

Electrical Installation

Required Courses	Credits
EIC 100 Electrical Construction and Planning	4
EIC 110 Electrical Installations I	4
EIC 120 Electrical Installations II	4
EIC 130 National Electric Code I	4
Total Credits	16

Certificate

Relating to AAS/Construction Electrician

National Electrical Code

Required Courses	Credits
EIC 130 National Electrical Code I	4
EIC 135 National Electrical Code II	4
EIC 169 Electrical Code Calculations	4
Total Credits	12

Certificate

Relating to AAS/Construction Electrician

Electrical Codes and Standards

Required Courses	Credits
EIC 130 National Electrical Code I	4
EIC 135 National Electrical Code II	4
EIC 169 Electrical Code Calculations	4
EIC 211 IECC International Energy Conservation Code	4
Total Credits	16

Certificate

Relating to AAS/Construction Electrician

Residential Construction Electrician

Required Courses	Credits
CON 230 Blueprint Reading	4
EIC 100 Electrical Construction and Planning	4
EIC 110 Electrical Installations I	4
EIC 130 National Electric Code I	4
EIC 150 DC Circuit Fundamentals	4
EIC 155 AC Circuit Fundamentals	4
Total Credits	24

Certificate

Relating to AAS/Construction Electrician

Construction Electrician

Required Courses	Credits
CON 230 Blueprint Reading	4
EIC 100 Electrical Construction and Planning	4
EIC 110 Electrical Installations I	4
EIC 120 Electrical Installations II	4
EIC 130 National Electric Code I	4
EIC 135 National Electric Code II	4
EIC 150 DC Circuit Fundamentals	4
EIC 155 AC Circuit Fundamentals	4
EIC 169 Electrical Code Calculations	4
Total Credits	36

Certificate

Relating to AAS/Construction Electrician

Advanced Construction Electrician

Requires Construction Electrician Certificate or instructor's approval

Required Courses	Credits
AEC 221 Building Electrical/Mechanical Systems	3
EIC 124 Electrical Safety Requirements	1
EIC 215 Advanced Code Calculations	4
EIC 205 Advanced Electrical Planning	4
EIC 217 Electrical Estimating	4
EIC 240 Fire Alarm Fundamentals	4
Total Credits	20

Certificate

Relating to AAS/Maintenance Electrician:

Maintenance Electrician

Required Courses	Credits
EIC 110 Electrical Installations I	4
EIC 120 Electrical Installations II	4
EIC 130 National Electric Code I	4
EIC 135 National Electric Code II	4
EIC 150 DC Circuit Fundamentals	4
EIC 155 AC Circuit Fundamentals	4
EIC 167 Electrical Maintenance	4
EIC 220 Industrial Electrical Controls I	4
EIC 225 Programmable Controls	4
Total Credits	36

Certificate

Relating to AAS/Maintenance Electrician

Introduction to Instrumentation and Controls Technician

Required Courses	Credits
EIC 220 Industrial Electrical Controls	4
Prerequisite: EIC 150 and EIC 155 or permission	
EIC 225 Programmable Controls	4
EIC 230 Instrumentation and Controls I	4
Total Credits	12

Certificate

Relating to AAS/Maintenance Electrician

Advanced Instrumentation and Controls Technician

Required Courses	Credits
EIC 220 Industrial Electrical Controls	4
Prerequisite: EIC 150 and EIC 155 or permission	
EIC xxx Advanced Industrial Electrical Controls	4
EIC 225 Programmable Controls	4
EIC 226 Programmable Controls Advanced	4
EIC 230 Instrumentation & Controls I	4
Total Credits	20

Certificate

Relating to AAS/Maintenance Electrician:

Advanced Maintenance Electrician

Requires Maintenance Electrician Certificate or advisor approval

Required Courses	Credits
EIC 160 Electrical Instruments and Measurements	4
EIC 169 Electrical Code Calculations	4
EIC 205 Advanced Electrical Planning	4
EIC 210 Advanced National Electrical Code	4
EIC xxx Advanced Industrial Electrical Controls	4
EIC 226 Advanced Programmable Controllers	4
EIC 230 Instrumentation and Controls I	4
EIC 240 Fire Alarm Fundamentals	4
Total Credits	32

Certificate

Relating to AAS/Fire Protection Technology

Introduction to Fire Alarm Technician

Required Courses	Credits
EIC 240 Fire Alarm Fundamentals	4
EIC 241 Fire Alarm Systems Design	4
EIC 242 National Fire Alarm Code	4
Total Credits	12

Certificate

Relating to AAS/Fire Protection Technology

Fire Alarm Code

Required Courses	Credits
EIC 130 National Electrical Code I	4
EIC 135 National Electrical Code II	4
EIC 241 Fire Alarm Systems Design	4
EIC 242 National Fire Alarm Code	4
Total Credits	16

Certificate

Relating to AAS/Fire Protection Technology

Fire Alarm and Detection Technician

Required Courses	Credits
EIC 110 Electrical Installations I	4
EIC 120 Electrical Installations II	4
EIC 124 Electrical Safety Requirements	1
EIC 150 DC Circuit Fundamentals	4
EIC 155 AC Circuit Fundamentals	4
EIC 240 Fire Alarm Fundamentals	4
EIC 241 Fire Alarm Systems Design	4
EIC 242 National Fire Alarm Code	4
Total Credits	29

Certificate

Relating to AAS/Fire Protection Technology

Post-Degree Specialization for Advanced Fire Code

Required Courses	Credits
EIC 130 National Electrical Code I	4
EIC 135 National Electrical Code II	4
EIC 242 National Fire Alarm Code	4
FST 204 Fire Codes and Ordinances	3
Prerequisite: Permission of instructor (Exemption from FST prerequisite courses is granted to Construction Technology students.)	
Total Credits	15

Certificate

Relating to AAS/Construction Electrician

Post-Degree Specialization for Advanced Construction Electrician

Requires AAS/Construction Electrician or instructor's approval.

Required Courses	Credits
EIC 160 Electrical Instruments and Measurements	4
EIC 205 Advanced Electrical Planning	4
EIC 210 Advanced National Electrical Code	4
EIC 215 Advanced Code Calculations	4
Total Credits	16

Certificate

Relating to AAS/Maintenance Electrician:

Post-Degree Specialization for Advanced Maintenance Electrician

Prerequisite: AAS degree maintenance electrician emphasis or advisor approval

Required Courses	Credits
EIC 165 Solid State Devices and Circuits	4
EIC 210 Advanced National Electric Code	4
EIC 211 IECC International Energy Conservation Code	4
EIC 241 Advanced Fire Alarm Systems	4
Total Credits	16

Certificate

Relating to AAS/Maintenance Electrician

Advanced Instrumentation and Controls Technician

Required Courses	Credits
EIC 220 Industrial Electrical Controls	4
Pre-requisite: EIC 150 and EIC 155 or permission	
EIC 223 Advanced Industrial Electrical Controls	4
EIC 225 Programmable Controls	4
EIC 226 Programmable Controls Advanced	4
EIC 230 Instrumentation & Controls I	4
Total Credits	20

Certificate

Relating to AAS/Maintenance Electrician:

Advanced Maintenance Electrician

Requires Maintenance Electrician Certificate or advisor approval

Required Courses		Credits
EIC 160	Electrical Instruments and Measurements	4
EIC 169	Electrical Code Calculations	4
EIC 205	Advanced Electrical Planning	4
EIC 210	Advanced National Electrical Code	4
EIC 230	Instrumentation and Controls I	4
EIC 240	Fire Alarm Fundamentals	4
EIC 225	Programmable Controllers	4
Total Credits		28

Certificate

Relating to AAS/Fire Protection Technology

Introduction to Fire Alarm Technician

Required Courses		Credits
EIC 240	Fire Alarm Fundamentals	4
EIC 241	Fire Alarm Systems Design	4
EIC 242	National Fire Alarm Code	4
Total Credits		12

Certificate

Relating to AAS/Fire Protection Technology

Fire Alarm and Detection Technician

Required Courses		Credits
CAD 111	Auto CAD and File Management	1
CON 230	Blueprint Reading	4
EIC 150	DC Circuit Fundamentals	4
EIC 155	AC Circuit Fundamentals	4
EIC 240	Fire Alarm Fundamentals	4
EIC 241	Fire Alarm Systems Design	4
EIC 242	National Fire Alarm Code	4
Total Credits		25

Certificate

Relating to AAS/Fire Protection Technology

Post-Degree Specialization for Advanced Fire Code

Required Courses		Credits
EIC 130	National Electrical Code I	4
EIC 135	National Electrical Code II	4
EIC 242	National Fire Alarm Code	4
FST 204	Fire Codes and Ordinances	3
Pre-requisite: Permission of instructor (Exemption from FST pre-requisite courses is granted to Construction Technology students.)		
Total Credits		15

Certificate

Relating to AAS/Construction Electrician

Post-Degree Specialization for Advanced Construction Electrician

Requires AAS/Construction Electrician or instructor's approval.

Required Courses		Credits
EIC 160	Electrical Instruments and Measurements	4
EIC 205	Advanced Electrical Planning	4
EIC 210	Advanced National Electrical Code	4
EIC 215	Advanced Code Calculations	4
Total Credits		16

Certificate

Relating to AAS/Maintenance Electrician:

Post-Degree Specialization for Advanced Maintenance Electrician

Prerequisite: AAS degree maintenance electrician emphasis or advisor approval

Required Courses		Credits
EIC 165	Solid State Devices and Circuits	4
EIC 210	Advanced National Electric Code	4
EIC 230	Instrumentation and Controls I	4
EIC 241	Advanced Fire Alarm Systems	4
Total Credits		16