

The Industrial Maintenance Technology program will prepare students for entry level employment as industrial maintenance technicians. An industrial maintenance technician is a vital member of a team of people responsible for planning, analyzing, and maintaining a wide variety of complex production equipment, power generation equipment and sophisticated control systems. Colorado industrial firms require employees with knowledge and skills in technology application, engineering and design, production processes planning and control, equipment maintenance, communication and data manipulation and file exchange. Increasingly complex and automated industrial electrical and mechanical systems require maintenance skills, diagnostic and troubleshooting skills and repair skills to assure their continued and safe operation.

The AAS degrees and certificates found within this program will provide the student with the basic skills required to safely maintain production equipment and understand the basic principles of operation and control. The graduate will understand the technical aspects of the work, the work place responsibilities of the individual and the importance of safety in this vitally important, shift oriented position.

The industries interested in the graduates from the program include, but are not limited to alternate energy source production, petroleum product manufacturing, pharmaceutical production, food and beverage, electric power generation, drinking water treatment and wastewater treatment, oil exploration and production, mining and mineral processing and numerous product manufacturing facilities.

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## Degrees: Associate of Applied Science

**Industrial Maintenance Technology – Mechanical**  
**Industrial Maintenance Technology – Electrical**  
**Electro-Mechanical Industrial Maintenance**

## Certificates:

**Industrial Maintenance Technology**  
**Industrial Electrical Technician**  
**Codes and Standards**  
**Commercial and Industrial Heating and Cooling**  
**Electro-Mechanical Technician**  
**Introduction to Predictive Maintenance Technology (pending approval)**  
**Introduction to Industrial Control Systems (pending approval)**  
**Introduction to Industrial Electrical Maintenance (pending approval)**  
**Introduction to Industrial Instrumentation and Controls (pending approval)**  
**Introduction to Industrial Maintenance Team Leadership (pending approval)**

## AAS Degree

### Industrial Maintenance Technology - Mechanical

Required Courses	Credits
BUS 118 Business Survival Skills	3
ENT 106 Print Reading for Manufacturing	3
ENT 238 Industrial Fluid Power and Controls	3
HVA 105 Electricity for HVAC/R	4
IMA 100 Intro Industrial Maintenance	3
IMA 120 Pump, Seals Rotating Equipment	3
IMA 150 Industrial Problem Solving Methods	2
IMA 210 Vibration Principles I	3
IMA 250 Industrial Machine Lubrication	3
MAC 105 Introduction to Machining Technology	4
PLU 101 Piping Skills	4
PRO 110 Safety, Health and Environment	3
PRO 280 Internship	4
or seek advisor approval for elective course(s) in HVA, WQM, IMA, PRO	
WEL 130 Maintenance Welding	4
<b>Required Course Credits</b>	<b>46</b>
<b>General Education Courses (See AAS Degree Requirements page 19)</b>	<b>19</b>
<b>Total Credits</b>	<b>65</b>

## AAS Degree

### Industrial Maintenance Technology - Electrical

Required Courses	Credits
BUS 118 Business Survival Skills	3
EIC 160 Electrical Instruments & Measurements	4
EIC 169 Electrical Code Calculations	4
EIC xxx Advanced Industrial Electrical Controls	4
EIC 225 Programmable Controllers	4
EIC 226 PLC Controllers Advanced	4

EIC 230	Instrumentation & Controls I	4
ENT 106	Print Reading for Manufacturing	3
HVA 105	Electricity for HVAC/R	4
IMA 100	Intro Industrial Maintenance	3
PRO 110	Safety, Health and Environment	3
PRO 280	Internship	4
or seek advisor approval for elective course(s) in HVA, WQM, IMA, PRO		

**Required Course Credits:** **44**

**General Education Courses (See AAS Degree Requirements page 24)** **19**

**Total Credits** **63**

## AAS Degree

### Electro-Mechanical Industrial Maintenance

Required Courses		Credits
EIC 110	Electrical Installations I	4
EIC 120	Electrical Installations II	4
EIC 220	Industrial Electrical Controls I	4
HVA 102	Basic Refrigeration	4
HVA 105	Electricity for HVAC/R	4
HVA 113	Refrigerant Recovery Training	1
HVA 132	Air Conditioning and Refrigeration Controls	4
HVA 231	Pneumatic Controls	4

**Required Course Credits** **29**

**General Education Courses (See AAS Degree Requirements page 24)** **15**

**Required Elective Credits for Degree (Select from Electives below)** **16**

EIC 160	Electrical Measurement	4
EIC 167	Electrical Maintenance	4
EIC xxx	Advanced Industrial Electrical Controls	4
EIC 225	Programmable Controls	4
EIC 226	PLC Controllers Advanced	4
EIC 230	Instrumentation and Controls I	4
ENT 106	Print Reading for Manufacturing	3
HVA 110	Heating Fundamentals	4
HVA 113	Refrigerant Recovery Training	1
HVA 162	Heating Controls	4
HVA 231	Pneumatic Controls	4
HVA 247	Hot Water Heating	4
HVA 251	Building Automation	4
HVA 263	Chillers	4
IMA 100	Introduction to Industrial Maintenance	3
IMA 150	Industrial Problem Solving Methods	2
IMA 160	Basic Fluid Power	3
IMA 210	Vibration Principles I	3
IMA 250	Industrial Machine Lubrication	3
MAC 105	Introduction to Machining Technology	3
MIL 104	Introduction to Bearings	2
PLU 101	Pipe/Piping Systems	4
PRO 110	Work Place Safety (M/E)	3
WEL 130	Maintenance Welding	4

**Total Credits** **60**

## Industrial Maintenance Technology Certificates:

Contact Chuck Beck at 303.914.6063 for additional information about the following certificates:

### Certificate

#### Industrial Maintenance Technology

Required Courses		Credits
EIC 110	Electrical Installations I	4
EIC 120	Electrical Installations II	4
EIC 220	Industrial Electrical Controls I	4
HVA 102	Basic Refrigeration	4
HVA 105	Electricity for HVAC/R	4
HVA 113	Refrigerant Recovery Training	1
HVA 132	Air Conditioning and Refrigeration Controls	4
HVA 231	Pneumatic Controls	4

**Required Course Credits** **29**

**Required Elective Credits for Certificate (Select from Electives below)** **16**

EIC 160	Electrical Measurement	4
EIC 167	Electrical Maintenance	4
EIC xxx	Advanced Industrial Electrical Controls	4
EIC 225	Programmable Controllers	4
EIC 226	PLC Controllers Advanced	4
EIC 230	Instrumentation and Controls II	4
ENT 106	Print Reading for Manufacturing	3
ENT 238	Basic Fluid Power	3
HVA 110	Heating Fundamentals	4
HVA 113	Refrigerant Recovery Training	1
HVA 162	Heating Controls	4
HVA 231	Pneumatic Controls	4
HVA 247	Hot Water Heating	4
HVA 251	Building Automation I	4
HVA 263	Chillers	4
IMA 100	Introduction to Industrial Maintenance	4
IMA 120	Pumps, Seals Rotating Equipment	3
IMA 150	Industrial Problem Solving Methods	2
IMA 210	Vibration Principles I	3
IMA 250	Industrial Machine Lubrication	3
MAC 105	Introduction to Machining Technology	3
MIL 104	Introduction to Bearings	2
PLU 101	Pipe/Piping Systems	4
PRO 110	Safety, Health and Environment	3
WEL 130	Maintenance Welding	4

**Total Credits** **45**

## Certificate

### Industrial Electrical Technician

Choose 9 credits from the following:

HVA 105	Basics Of AC & DC Electricity	4
EIC 124	Electrical Safety Requirements	1
EIC 130	National Electrical Code	4
EIC 167	Electrical Maintenance	4
EIC 169	Electrical Code Calculations	4
EIC 220	Industrial Electrical Controls I	4
EIC 225	Programmable Controllers	4
EIC 230	Instrumentation and Controls II	4

## Certificate

### Codes and Standards

Choose 7.5 credits from the following:

EIC 124	Electrical Safety Requirements and Procedures	1
EIC 130	National Electrical Code I	4
EIC 144	Grounding and Bonding	1
EIC 242	National Fire Alarm Code	1.5

## Certificate

### Commercial and Industrial Heating and Cooling - CIHC

Choose 7.5 credits from the following:

HVA 105	Basics Of AC & DC Electricity	4
EIC 166	Turning DDC/Process Control Loops	1.5
EIC 122	Electrical Distribution Theory II	1.5
HVA 114	Centrifugal Pumps	1.5
HVA 131	Refrigeration and Air Conditioning	1.5
HVA 192	Refrigerant Retrofit Training	1.5
HVA 194	Fundamentals of Pneumatic Comfort Controls	1.5
HVA 263	Chillers	4

## Certificate

### Electro-Mechanical Technician

Choose 9 credits from the following:

HVA 105	Basics Of AC & DC Electricity	4
HVA 102	Basic Refrigeration	4
EIC 124	Electrical Safety Requirements	1
EIC 144	Grounding And Bonding	1
EIC 226	PLC's Controllers Advanced	4
HVA 124	Advanced Air Conditioning	4

## Certificate

### Industrial & Commercial HVAC Technician

HVA 102	Basic Refrigeration	4
HVA 105	Basics Of AC & DC Electricity	4
HVA 110	Heating Fundamentals	4
HVA 113	Refrigerant Recovery Training	4
HVA 132	Air Conditioning & Refrigeration Controls	4
HVA 162	Heating Controls	4
HVA 247	Hot Water Heating	4
HVA 263	Chillers	4
<b>Total credits</b>		<b>32</b>

## Certificate

### Introduction to Predictive Maintenance Technology

PRO 110	Safety, Health and Environment	3
IMA 210	Vibration I	3
IMA 250	Industrial Machine Lubrication	3
<b>Total credits</b>		<b>9</b>

## Certificate

### Introduction to Industrial Control Systems

EIC 220	Industrial Electrical Controls I	4
EIC 225	Programmable Controllers	4
EIC 230	Instrumentation and Controls I	4
<b>Total credits</b>		<b>9.5</b>

## Certificate

### Introduction to Industrial Electrical Maintenance

HVA 105	AC/DC Fundamentals	4
EIC 220	Industrial Electrical Controls I	4
EIC 226	PLC Controllers Advanced	4
<b>Total credits</b>		<b>12</b>

## Certificate

### Introduction to Industrial Instrumentation and Controls

EIC 230	Industrial Instrumentation and Controls I	4
EIC 225	Programmable Controllers	4
<b>Total credits:</b>		<b>8</b>

## Certificate

### Introduction to Industrial Maintenance Team Leadership

PRO 110	Safety, Health and Environment	3
BUS 118	Business Survival Skills	3
PSY/SOC	Psychology or Sociology	3
IMA 150	Industrial Problem Solving Methods	2
<b>Total credits</b>		<b>11</b>