ELECTRONICS TECHNOLOGY

AAS DEGREE

The Electronics Technology program offers two-year degrees and one-year specialty certificates in the electronics field. The degree program is designed to provide the student with fundamentals of electricity and electronics, including digital electronics and microcomputers, specialized manufacturing electronics, industrial automation and electronic communications. The program also includes an Electronics Engineering Technology degree for transferring students. This program emphasizes a hands-on approach to learning through projects to reinforce the theoretical material. This degree program requires a minimum of 64 credits in program requirements, program electives and general education in the courses listed below.

Field of Study Code: ELECT.AAS

Program Requirements .............................................. 27

Elect 1100 Electricity and Electronics Fundamentals ........ 3
Elect 1101 Circuits I .................................................. 3
Elect 1102 Circuits II .................................................. 4
Elect 1141 Digital Fundamentals .................................. 3
Elect 1151 Electronic Devices and Applications ............ 4
Elect 1161 Electronic Communications ....................... 4
Elect 1201 Renewable Energy Fundamentals ............... 2
Elect 2273 Embedded Systems and Microcontroller Programming .................................................. 3
Elmec 2510 Process and Automation Controls ............. 3

Program Electives .................................................... 19

Select 19 credits from the courses listed below. (In addition to the courses listed above.)

Elect 1120 Electronic Documentation ..................................... 2
Elect 1201 Renewable Energy Fundamentals ............... 2
Elect 1221 Introduction to Biomedical Instrumentation Technology .................................................. 3
Elect 1820 Selected Topics I .................................... 1 to 4
Elect 2001 Green Energy Systems .............................. 3
Elect 2221 Biomedical Instrumentation Technology ............ 3
Elect 2860 Internship (Career & Technical Education) ........................................ 1 to 4
Cit 1121 Introduction to Networks ................................... 3
Elmec 1110 Motor & Generator Fundamentals ............. 3
Elmec 1171 Introduction to Robotic Technology ............. 3
Elmec 1420 Drive Components ..................................... 2
Elmec 1190 Introduction to Programmable Logic Controllers .................................................. 3

Elmec 1420 Drive Components ..................................... 2
Elmec 2410 Programmable Controller II (PLC II) ............. 3
Elmec 2600 Motion Control ......................................... 2
Hvacr 1100 Introduction to Control ................................ 3
Manuf 1101 Industrial Design/CAD ............................. 3

General Education ................................................... 18
(In addition to the courses listed above.)

Total Credits Required ............................................. 64

AAS DEGREE

The Biomedical Engineering Technology degree prepares students for careers as biomedical equipment technicians, (also known as biomedical engineering technicians) in hospitals, health agencies, businesses and industries that manufacture and maintain electronic and biomedical instrumentation equipment. This program prepares students to test, install, and maintain healthcare components such as rehabilitation and therapeutic products, medical imaging systems, and computer-based systems used in the biomedical technology field. This degree program requires 64 credits in program requirements, program electives and general education in the courses listed below.

Field of Study Code: ELECT.AAS.BIOMED

Program Requirements ............................................. 33

Elect 1100 Electricity and Electronics Fundamentals ........ 3
Elect 1101* Circuits I .............................................. 3
Elect 1102* Circuits II ............................................ 4
Elect 1141 Digital Fundamentals ................................ 3
Elect 1151 Electronic Devices and Applications ............ 4
Elect 1221 Introduction to Biomedical Instrumentation Technology .................................................. 3
Elect 2221 Biomedical Instrumentation Technology ............ 3
Elect 2221 Biomedical Instrumentation Technology and Applications ........................................ 3
Anat 1500 Survey of Human Anatomy and Physiology .... 3
Elmec 2510 Process and Automation Controls ............. 3
Hlths 1110 Biomedical Terminology ............................ 3

Program Electives ................................................... 13

Select 13 credits from the courses listed below. (In addition to the courses listed above.)

Elect 1120 Electronic Documentation ..................................... 2
Elect 1161 Electronic Communications ..................................... 4
Elect 1201 Renewable Energy Fundamentals ............... 2
Elmec 1101 Survey of Automation ..................................... 3

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Program Requirements ...........................................51
Elect 1100 Electricity and Electronics Fundamentals ..........3
Elect 1101 Circuits I .............................................3
Elect 1110 Introduction to Technology ........................2
Elect 1120 Electronic Documentation ..........................2
Elect 1141 Digital Fundamentals ..............................3
Elect 1151 Electronic Devices and Applications ...............4
Elect 1201 Renewable Energy Fundamentals .................2
Elect 2255 Industrial Controls .....................................3
Elmec 1110 Motor & Generator Fundamentals .................3
Elmec 1171 Introduction to Robotic Technology ...............3
Elmec 1190 Introduction to Programmable Logic Controllers ..............................................1
Elmec 1420 Drive Components ....................................2
Elmec 2410 Programmable Controller II (PLC II) ..............3
Elmec 2600 Motion Control ........................................2
Engl 1101 English Composition I ................................3
Math 1115 Technical Mathematics I ............................3
Physi 1100 Physics ..............................................4
Speci 1100 Fundamentals of Speech Communication ..........3

Program Electives ..................................................7
Select seven credits from the courses listed below. (In addition to the courses listed above.)
Elect 1102 Circuits II .............................................4
Elect 1161 Electronic Communications ........................4
Elect 2001 Green Energy Systems ............................3
Elect 2245 Programmable Logic Devices .......................4
Elect 2273 Embedded Systems and Microcontroller Programming ..............................................3
Elect 2860 Internship (Career & Technical Education) ..............1 to 4
Elmec 1120 Residential Wiring ....................................3
Elmec 1130 Industrial Electricity ................................3
Elmec 1141 Hydraulics and Pneumatics .......................3
Elmec 1150 National Electrical Code .........................3
Manuf 1104 Technical Mechanics .............................2
Weld 1100 Welding I ............................................3

General Education ..................................................18
(In addition to the courses listed above.)

Total Credits Required ........................................64

AAS DEGREE

Integrated Engineering Technology (InET), a two-year program leading to an AAS degree, is designed to meet industry needs for multifunctional technicians competent in mechanics, computers, and electronics technology. This innovative program is an activity-based approach to learning where students work in teams. As InET engineering technicians, students may work individually or as members of a professional team, applying aspects of scientific and engineering concepts to the implementation of existing technologies and the creation of new technologies in the areas of administration, installations and maintenance of robotics and automated systems development, operation and maintenance. This degree requires a minimum of 64 credits in program requirements, program electives and general education.

Field of Study Code: INET.AAS

Elect 1100 Electricity and Electronics Fundamentals ..........3
Elect 1101 Circuits I .............................................3
Elect 1110 Introduction to Technology ........................2
Elect 1120 Electronic Documentation ..........................2
Elect 1141 Digital Fundamentals ..............................3
Elect 1151 Electronic Devices and Applications ...............4
Elect 1201 Renewable Energy Fundamentals .................2
Elect 2255 Industrial Controls .....................................3
Elmec 1110 Motor & Generator Fundamentals .................3
Elmec 1171 Introduction to Robotic Technology ...............3
Elmec 1190 Introduction to Programmable Logic Controllers ..............................................1
Elmec 1420 Drive Components ....................................2
Elmec 2410 Programmable Controller II (PLC II) ..............3
Elmec 2600 Motion Control ........................................2
Engl 1101 English Composition I ................................3
Math 1115 Technical Mathematics I ............................3
Physi 1100 Physics ..............................................4
Speci 1100 Fundamentals of Speech Communication ..........3
Elect 1100 Electricity and Electronics Fundamentals ..........3
Elect 1141 Digital Fundamentals ..............................3
Elect 1151 Electronic Devices and Applications ...............4
Elect 1161 Electronic Communications ........................4
Elect 2273 Embedded Systems and Microcontroller Programming ..............................................3

CERTIFICATE

The Electronics Technology certificate provides the student with fundamentals of electricity and electronics, including digital electronics and microcomputers, specialized manufacturing electronics, industrial automation and electronic communications. To experience is to learn. This program emphasizes a hands-on approach to learning through projects to reinforce the theoretical material. This certificate requires 17 credits in the courses listed below.

Field of Study Code: ELECT.CER

Total Credits Required ........................................17
Elect 1100 Electricity and Electronics Fundamentals ..........3
Elect 1141 Digital Fundamentals ..............................3
Elect 1151 Electronic Devices and Applications ...............4
Elect 1161 Electronic Communications ........................4
Elect 2273 Embedded Systems and Microcontroller Programming ..............................................3

CERTIFICATE

The Electricity and Electronics Technology certificate prepares students for an entry-level certificate with basic skills and competencies in the field of analog and digital electronic and electrical devices. It provides students with fundamentals of electricity and electronics, including analog and digital circuits, microcomputers, and industrial automation. This certificate requires 13 credits in the courses listed below.

Field of Study Code: ELECT.CER.EETEC

Total Credits Required ........................................13
Elect 1100 Electricity and Electronics Fundamentals ..........3
Elect 1120 Electronic Documentation ..........................2
Elect 1130 Electronics Materials and Fabrication ..........2
Elect 1141 Digital Fundamentals .............................3
Elmec 1101 Survey of Automation ...............................3
CERTIFICATE

The **Industrial Controls and Automation certificate** combines electronics knowledge and electro-mechanical skills. The certificate incorporates hands-on learning where practice follows theory in the lab environment. This certificate meets the needs of an entry level technician position. The certificate requires 25 credits in the courses listed below.

**Field of Study Code: ELECT.CER.INDCA**

**Total Credits Required** ...................................................... 19

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<td>Digital Fundamentals</td>
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<tr>
<td>Elect 1151</td>
<td>Electronic Devices and Applications</td>
<td>4</td>
</tr>
<tr>
<td>Elmec 1171</td>
<td>Introduction to Robotic Technology</td>
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<tr>
<td>Elmec 1190</td>
<td>Introduction to Programmable Logic Controllers</td>
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**Program Electives** .......................................................... 6

Select six credits from the following courses. (In addition to the courses listed above.)

- Elect 2273 Embedded Systems and Microcontroller Programming ................................................... 3
- Elmec 1110 Motor and Generator Fundamentals .................................................. 3
- Elmec 2510 Process and Automation Controls ............................................................ 3
- Elmec 2600 Motion Control: Servo and Stepper Motor Application and Control ............. 2

CERTIFICATE

The **Renewable Energy Technology certificate** is intended to train technicians in the field of electronics, electricity, mechanics, and computers related to the applications in the field of renewable and green energies. This certificate requires 14 credits in the courses listed below.

**Field of Study Code: ELECT.CER.RENEW**

**Total Credits Required** ...................................................... 14

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<td>Elmec 1150</td>
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