

## **(061) Associate in Applied Science**

Graduates of the Multicraft Technology program are prepared to enter the work force as engineering technicians, field service engineers, plant maintenance technicians and application engineers or to move into supervisory positions. Graduates may continue their education at many colleges and universities and earn an advanced degree. Multicraft technicians combine knowledge of mechanical engineering technology with knowledge of electrical and electronic circuits to maintain, design, develop, test, and manufacture electronic and computer-controlled mechanical systems, such as robotic assembly machines. They also operate these machines in factories and other work sites. Maintenance technicians will work independently and with other plant personnel to perform preventative, predictive and routine maintenance tasks. They will troubleshoot issues, repair failures of production and facilities equipment, and ensure maximum equipment efficiency and effectiveness. Their work often overlaps that of both electrical and electronic engineering technicians and mechanical engineering technicians. The program content is constantly updated so that students stay current and competitive in today's market place. This degree allows the student to choose electives towards a student-selected specialization in Alternative Energy, Electrical, Electronics, HVAC, or Welding. Graduates of the program may pursue certification in their field. During the initial semester of enrollment in the program, students will be required to provide proof of successful completion of or pass the National Career Readiness Certificate (WorkKeys) exam. Those students who do not have proof of successful completion at the end of the first semester will be required to take the Certified Manufacturing Assistant course (IND 101) during the next semester.

### **Work and Employment**

Graduates of this program are prepared to work in industry, instrumentation, design, field service, and service laboratories. Graduates may supervise technicians in the assembly, installation, repair, maintenance, calibration, and modification of electro-mechanical systems and robotics.

### **Special Considerations**

Workers usually have the following skills and aptitudes: the ability to do precise and detailed work, use good eye-hand coordination, notice and compare differences in objects, have mathematical and mechanical aptitudes, are analytic, curious and creative.

### **Program Contacts at Sauk Valley Community College**

Counseling Office, 815/835-6354;

Christopher Carlson, Assistant Professor of HVAC, 815/835-6221;

Scott Gillihan, Assistant Instructor of Welding, 815/835-6278;

Jeffrey Johnson, Assistant Instructor of Electronics, 815/835-6282;

Steven McPherson, Associate Professor of Electronics/Technology, 815/835-6347.

Major Field Requirements - Sem/Hrs: 46

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- Electives 9 Semester hour(s) -See Area Emphasis electives below for choices.
  
  - EET 110 - Introduction to Digital Electronics 4 Semester hour(s)
  - EET 245 - Programmable Controllers 3 Semester hour(s)
  - ELT 160 - Fundamentals of Electricity 3 Semester hour(s)
  - ELT 259 - Industrial and Agricultural Wiring 3 Semester hour(s)
  - ELT 262 - Electrical Controls 3 Semester hour(s)
  - HRS 105 - Refrigeration Principles 3 Semester hour(s)
  - IND 105 - Industrial Computers Applications 2 Semester hour(s) \*
  - IND 116 - Industrial Print Reading 3 Semester hour(s)
  - IND 131 - OSHA Standards 1 Semester hour(s)
  - IND 218 - Fluid Power 3 Semester hour(s)
  - IND 239 - Industrial Communications 3 Semester hour(s)
  - IND 250 (1) - Industrial Internship 1 Semester hour(s)
  - WLD 102 - Shielded Metal Arc Welding 3 Semester hour(s)

- WLD 106 - Welding Fundamentals 2 Semester hour(s)

Note:

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\* Students may choose CIS 109 in lieu of IND 105.

General Education Requirements - Sem/Hrs: 16

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- Communications 6 Semester hour(s)
- Humanities/Fine Arts **OR** Social/Behavioral Science 3 Semester hour(s)
- Mathematics (MAT 106 or higher Required) 3 Semester hour(s)
- Physical Science (PHY 175 Required) 4 Semester hour(s)

SVCC Degree Requirement - Sem/Hrs: 1

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- FYE 101 - First Year Experience 1 Semester hour(s)

Electives for Alternative Energy Emphasis - Select 9 Sem/Hrs

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- ENE 102 - Small Wind Energy 3 Semester hour(s)
- ENE 135 - Renewable Energy 3 Semester hour(s)
- ENE 140 - Solar Thermal Energy 3 Semester hour(s)
- ENE 145 - Geothermal Energy 3 Semester hour(s)

Electives for Electrical Emphasis - Select 9 Sem/Hrs

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- EET 252 - Industrial Electronics 3 Semester hour(s)
- ELT 101 - Electrical Wiring 3 Semester hour(s)
- ELT 261 - National Electric Code 3 Semester hour(s)
- ELT 265 - Power Distribution 3 Semester hour(s)
- IND 219 - Industrial Troubleshooting 3 Semester hour(s)

Electives for Electronics Emphasis - Select 9 Sem/Hrs

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- EET 107 - Introduction to DC and AC Circuits 4 Semester hour(s)
- EET 207 - Advanced Circuits 3 Semester hour(s)
- EET 218 - Microprocessor Architecture and Applications 4 Semester hour(s)
- EET 261 - Advanced Programmable Controllers 3 Semester hour(s)
- EET 299 - Special Topics in Electronics 1 to 3 Semester hour(s)

Electives for HVAC Emphasis - Select 9 Sem/Hrs

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- ENE 150 - Energy Audit 3 Semester hour(s)
- HRS 120 - Basic Refrigeration 3 Semester hour(s)
- HRS 130 - Basic Heating 3 Semester hour(s)

Electives for Welding Emphasis - Select 9 Sem/Hrs

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- WLD 101 - Industrial MIG Welding 2 Semester hour(s)
- WLD 103 - MIG Welding 3 Semester hour(s)
- WLD 104 - TIG Welding 3 Semester hour(s)
- WLD 132 - Horizontal Pipe Welding-2G 3 Semester hour(s) Semester hour(s)
- WLD 134 - TIG-Small Diameter Pipe 3 Semester hour(s) Semester hour(s)
- WLD 135 - Vertical Pipe Welding-5G 3 Semester hour(s) Semester hour(s)
- WLD 136 - Angled Pipe Welding-6G 3 Semester hours Semester hour(s)
- WLD 137 - TIG-Large Diameter Pipe 3 Semester hour(s) Semester hour(s)

Total Hours Required for A.A.S. Degree: 63

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### Suggested Program

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First Semester - Sem/Hrs: 18

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- Elective 3 Semester hour(s)
- EET 110 - Introduction to Digital Electronics 4 Semester hour(s)
- ELT 160 - Fundamentals of Electricity 3 Semester hour(s)
- FYE 101 - First Year Experience 1 Semester hour(s)
- IND 105 - Industrial Computers Applications 2 Semester hour(s)
- IND 116 - Industrial Print Reading 3 Semester hour(s)
- WLD 106 - Welding Fundamentals 2 Semester hour(s)

Second Semester - Sem/Hrs: 13

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- EET 245 - Programmable Controllers 3 Semester hour(s)
- ELT 259 - Industrial and Agricultural Wiring 3 Semester hour(s)
- IND 131 - OSHA Standards 1 Semester hour(s)
- IND 218 - Fluid Power 3 Semester hour(s)
- MAT 106 - Applied Mathematics 3 Semester hour(s)

Summer Semester - Sem/Hrs: 1

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- IND 250 (1) - Industrial Internship 1 Semester hour(s)

Third Semester - Sem/Hrs: 15

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- Elective 3 Semester hour(s)
- Humanities/Fine Arts **OR** Social/Behavioral Science 3 Semester hour(s)
- ENG 101 - Composition I 3 Semester hour(s)
- ELT 262 - Electrical Controls 3 Semester hour(s)
- HRS 105 - Refrigeration Principles 3 Semester hour(s)

Fourth Semester - Sem/Hrs: 16

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- Elective 3 Semester hour(s)
- ENG 111 - Business and Technical Communication 3 Semester hour(s)
- IND 239 - Industrial Communications 3 Semester hour(s)
- PHY 175 - Introduction to Physics 4 Semester hour(s)
- WLD 102 - Shielded Metal Arc Welding 3 Semester hour(s)

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