Electricity-Electronics
CAREER AND TECHNICAL EDUCATION

DEGREES
A.A. - Computer and Networking Technology
A.A. - Electrical Technology
A.A. - Electronics Technician
A.A. - Instrumentation and Process Control Technology
A.A. - Mechatronics/Automated Systems Technician

CERTIFICATES
Computer and Networking Technology
Electronics Technician
Industrial Electrical Technician
Instrumentation and Process Control Technology
Mechatronics/Automated Systems Technician

Gainful Employment Disclosure Metrics
Gainful Employment provides students information useful in determining which school to attend for career technical education training. GE information for Merced College can be found by selecting the Gainful Employment Disclosure icon on the Merced College home page or by logging on to the following web address: Merced College Gainful Employment

Program Description
The Electronics Department at Merced College is offering cross-disciplinary curricula that prepare students for rewarding entry-level technician positions in various high-tech fields as Electronics, Electrical, Computer Networking and Industrial Electronics, and Instrumentation and Process Control.

These programs introduce students to electrical and electronics tools, components, circuits, energy sources, analog and digital integrated devices that can be found in complex technical equipment. Hands-on laboratory exercises are designed to develop real-world practical skills in using modern test equipment for troubleshooting circuits and repairing various industrial computerized systems and networks, specific to each area of study.

Career Opportunities
Students who graduate with a degree in electronics have many work opportunities. There are wide variety of businesses that are looking for workers with good electronics background to maintain, repair electronic equipment or to provide technical support to engineers in such areas as research, design, development, testing, or manufacturing process.

DEGREE (5/13)
A.A. - Computer and Networking Technology
(09040.AA)

For an Associate in Arts Degree in Computer and Networking Technology, students must meet the graduation requirements and complete the required program courses with a minimum grade of a C in each course and have a minimum grade point average of 2.0.

Program Student Learning Outcomes
A. Demonstrate the ability to communicate effectively in accomplishing job related tasks.
B. Demonstrate field related entry level theoretical and practical skills.
C. Employ the principles of job related safety requirements.

Core: Units
CPSC-30 Computer Applications ..............................................3
CPSC-40A Networking for Home and Small Businesses ..........3
or ELCT-40A Networking for Home and Small Businesses ..........3
CPSC-40B Working at a Small-to-Medium Business or ISP ......3
or ELCT-40B Working at a Small-to-Medium Business or ISP ......3
ELCT-30 Exploring the World of Electricity and Electronics.....3
or ELCT-31 Foundations of Electronics - DC and AC Circuits......5
ELCT-34 Digital Logic Circuits and Systems.........................3
ELCT-36 Networking Topologies and Cabling.......................3
ELCT-40C Routing and Switching in the Enterprise...............3
ELCT-40D Designing and Supporting Computer Networks.......3
ELCT-44 Electronics Project Design, Fabrication and Repair..3
ELCT-51A Personal Computer Configuration, Assembly and Repair..................................................3
ELCT-51B A+ Certification Training..................................3
33-35

DEGREE (2/08)
A.A. - Electrical Technology (09200.AA)

For an Associate in Arts Degree in Electrical Technology, students must meet the graduation requirements and complete the following required courses.

Program Student Learning Outcomes
A. Exhibit the ability to communicate effectively in accomplishing job related tasks.
B. Demonstrate field related entry level theoretical and practical skills.
C. Recognize an appreciation for life-long learning.
D. Employ the principles of job related safety requirements.

Core: Units
DRFT-44 Print Reading and Sketching.................................3
ELCT-30 Exploring the World of Electricity and Electronics.....3
or ELCT-31 Foundations of Electronics - DC and AC Circuits......5
or ELCT-52 Introduction to Electricity and Electronics ............3
DEGREE (5/13)
A.A. - Electronics Technician (09250.AA)

For an Associate in Arts Degree in Electronics Technician, students must meet the general education requirements and complete the required program courses with a minimum grade of a C in each course and have a minimum grade point average of 2.0.

Program Student Learning Outcomes
A. Develop the lifelong learning skills necessary to think and to act competently in a complex, diverse, and constantly changing technology.
B. Differentiate between “Active” and “Passive” electronics components and analyze a basic electronic circuit with DC and/or AC voltage source.
C. Demonstrate autonomous thinking, problem-solving strategies to facilitate working effectively both, in teams and individually, to accomplish an assigned project.
D. Develop practical skills in working with electronics test equipment to be able to trouble shoot electronic circuits.

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<td>ELCT-32</td>
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<td>Microcontrollers and Programming with Robotics</td>
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<td>ELCT-43A</td>
<td>Industrial Instrumentation and Process Control</td>
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<td>ELCT-44</td>
<td>Electronics Project Design, Fabrication and Repair</td>
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<tr>
<td>ELCT-51A</td>
<td>PC Configuration, Assembly &amp; Repair</td>
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DEGREE (5/13)
A.A. - Instrumentation and Process Control Technology (09650.AA)

An Associate in Arts Degree in Instrumentation and Process Control Technology will be awarded upon the completion of the required program courses with a minimum grade of C and the requirements for the general education.

Program Student Learning Outcomes
A. Exhibit the ability to communicate effectively in accomplishing job related tasks.
B. Demonstrate field related entry level theoretical and practical skills.
C. Employ the principles of job related safety requirements.

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<td>ELCT-41</td>
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<td>ELCT-42A</td>
<td>Programmable Logic Controllers</td>
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<td>ELCT-42B</td>
<td>Advanced Topics in PLC Configuration and Programming</td>
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<tr>
<td>ELCT-43A</td>
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<td>ELCT-44</td>
<td>Electronics Project Design, Fabrication and Repair</td>
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<tr>
<td>ELCT-47</td>
<td>Electrical Motors, Generators, Transformers and AC Distribution</td>
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<tr>
<td>ELCT-55</td>
<td>Electrical Conduit Bending Theory and Techniques</td>
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DEGREE (5/13)
A.A. - Mechatronics/Automated Systems Technology (09660.AA)

An Associate in Arts Degree in Mechatronics/Automated Systems Technology will be awarded upon the completion of the required program courses with a minimum grade of 2.0 in each course required for the degree.

Program Student Learning Outcomes
A. Demonstrate entry level theoretical and practical skills applicable to mechatronics systems.
B. Recognize the importance of following the safety regulations at the workplace.
C. Exhibit the ability to communicate effectively in accomplishing job related tasks.

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