

ELEC

Electronics & Computer Engineering Technology A.S. Degree and Certificate Program

Total units for certificate – 45

A.S. Degree program requires certificate courses shown below plus an additional 24 units of general education coursework.

*The course sequence below is not the only possible arrangement and assumes you are starting in the Fall.
See mtsac.edu/electronics for more information on class scheduling.

1st Semester – 11 Units

Electronics Theory (DC) ELEC 50A 4 Units CSU Transferable	Electronics Theory (AC) ELEC 50B 4 Units (advisory ELEC50A) CSU Transferable	Technical Applications in Microcomputers ELEC 11 3 Units CSU Transferable
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2nd Semester – 9 Units

Customer Relations for the Technician TECH 60 2 Units	Digital Electronics ELEC 56 4 Units CSU Transferable	Electronic Assembly & Fabrication ELEC 61 3 Units (advisory ELEC50B) CSU Transferable
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3rd Semester – 12 Units

Semiconductor Devices ELEC 51 4 Units (advisory ELEC50B) CSU Transferable	Communications Systems ELEC 53 4 Units (advisory ELEC50B)	Industrial Electronics ELEC 54A 4 Units (advisory ELEC50B) CSU Transferable
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4th Semester – 13 Units

Microwave Communications ELEC 55 4 Units (advisory ELEC50B)	Microcontroller Systems ELEC 74 4 Units (advisory ELEC56) CSU Transferable	Industrial Systems ELEC 54B 3 Units (advisory ELEC50B) CSU Transferable	Computer Simulation & Troubleshooting ELEC 12 2 Units (advisory ELEC51)
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Other Recommended Courses:

ELEC 10	Introduction to Mechatronics
ELEC 76	Radio Telephone Communications
ELEC 62	Advanced Surface Mount Assembly and Rework
CNET 56	Computer Networks
PHYS 2AG	General Physics
CISP 11	Visual Basic

**We offer 5 other electronics certificates besides the core one above. For more information including our future class offerings, alternate certificates, class scheduling and transfer options, see:

www.mtsac.edu/electronics

Electronics and Computer Engineering Technology

The Electronics and Computer Engineering Technology degree and certificate programs prepare individuals either for initial employment or for enhancement of existing skills in electronics, or for transfer into B.S. programs in Electronics and Computer Engineering Technology or Industrial Technology offered in the California State University system.

The 45 semester units of electronics courses consist of 594 hours of classroom instruction and 648 hours of laboratory work. In addition to training in electronics fundamentals, the program includes advanced course work in microcontrollers and interfaces, electronic communications (analog and digital), and industrial electronics. Specialized training is offered on the following:

- Test instruments (including analog and digital meters, oscilloscopes, function generators, frequency counters, power supplies, and spectrum analyzers).
- Electronic assembly and fabrication techniques (including through-hole and surface-mount components using PACE stations) for IPC771/IPC7721 certifications.
- Digital development board with PIC microcontroller and CPLD.
- Digital logic trainer.
- Communications modules (including AM, FM, SSB, FDM/TDM, PCM, and fiber optics).
- X-Band (10.6-GHz) Gunn diode microwave trainer.
- Agilent N1996A CSA spectrum analyzer with tracking generator.
- FACET software training in industrial controls and components.
- Allen-Bradley SLC 100, 150, 500 programmable logic controllers (RS Logix and Windows software).
- National Instruments Multisim computer simulation software.
- Personal computers and Windows operating systems.

Computer skills are enhanced by course work in Windows, Microsoft Office (word processing, spreadsheets, database, and presentations), and the internet. Also offered is a course in computer simulation and troubleshooting for both digital and analog electronic circuits using the Multisim circuit-simulation suite of software from National Instruments.

Excluding textbooks and supplemental charges, enrollment fees for full-time, California resident students taking 12 units are \$552 per semester (as of 2017); state funding covers all other costs. Financial aid is available for those who qualify.

Mt. SAC is an authorized testing center for FCC license examinations administered by the National Association of Radio and Telecommunications Engineers (NARTE).