ELEC

Electronics & Computer Engineering Technology
A.S. Degree and Certificate Program (S0906 & T0906)
Total units for certificate – 45

A.S. Degree program requires certificate courses shown below plus an additional 26 units of general education coursework.

The course sequence below is not the only possible course arrangement. See back for more options.

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**

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**

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**

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)

Other HIGHLY Recommended Courses:

VOC FSF	Tool Use and Field Service Fundamentals (Non-Credit short term)
ELEC 10	Introduction to Mechatronics
ELEC 76	Radio Telephone Communications
ELEC 62	Advanced Surface Mount Assembly and Rework
CNET 56	Computer Networks
VOC EST54	Cable and Wiring Standards (Non-Credit short term)
CISP 31	Programming in C++

Visit this page to apply for certificates and degrees.

*After completing ELEC 50A, 50B, and 56, students qualify to receive the Electronics Technology Level 1 Certificate. (M0679)

After completing 12 additional units of any Electronics course work beyond the Level 1 certificate, for a total of 24 units, students are eligible to receive the Electronics Technology Level 2 Certificate. (N0680)

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 in the following industry standard hardware:

- Test Instruments - Laboratory-grade analog and digital meters, oscilloscopes, function generators, frequency counters, bench top dual powers supplies, bench top meters, spectrum analyzers with tracking generator, vector network analyzers (up to 8 GHz) (Keysight, Rigol, Tektronix, etc brands)
- Waveguide based laboratory: X-Band (10.6-GHz) Gunn diode microwave trainer
- Communications modules (including AM, FM, SSB, FDM/TDM, PCM, and fiber optics).
- Electronic assembly and fabrication techniques (including through-hole and surface-mount components using PACE stations) in accordance with IPC771/IPC7721 specifications.
- Digital development board; Embedded systems programming for Fubarino by chipKIT
- Arduino and FPGA programming.
- Digital logic trainer.
- FACET software training in industrial motor controls and LabVolt hardware
- Allen Bradley 1766/Micrologix 1400 programmable logic controllers with RS Logix software
- National Instruments Multisim and Ultiboard schematic capturing and simulation software.
- Personal computers and Windows operating systems, enhanced by course work in Microsoft Office Suite (word processing, spreadsheets, database, and presentations).

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

Electronics Degree Course Flow Chart

All courses below are required for A.S. degree

No classes have strictly enforced pre-requisites. Instead our courses have 'advisories'. Use this chart as a guideline for how to sequence your courses.

ELEC 50A

ELEC 50B — Can be take in 2nd 8 weeks of same semester as 50A

ELEC 11   TECH 60

Can be taken at any point

ELEC 56 — Both 56 and 51 required for 12 — ELEC 51   ELEC 54A   ELEC 54B   ELEC 61

ELEC 74   ELEC 12   ELEC 53

ELEC 55

Exceptions can be made to the course sequence above if necessary. Please talk to your instructor. Examples are:
- ELEC 53 and ELEC 55 can be taken in either order, but if given the option, take ELEC 53 first.
- ELEC 61 can be taken concurrently with ELEC 50A if necessary.
- ELEC 56 can be taken concurrently with ELEC50A, ELEC 74, and/or ELEC 12 if necessary.

See mtsac.edu/electronics for the course schedule for the next 3 years!