

# VOC: ELECTRONICS COMMUNICATIONS

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## #24210

In addition to courses in electronics fundamentals, the Electronics Communications certificate program encompasses the study of both wire-based and wireless forms of analog and digital communications systems. Topics include amplitude and frequency modulation, multiplexing, antennas, transmission lines, and radio-wave propagation, as well as microwave systems, including radar and satellite operations.

### Program Learning Outcomes

- Students will be technically competent.
- Students will be employed or seeking employment in the field or a related field.
- Students will employ polar and/or rectangular notation to determine the magnitude and phase shift of an unknown circuit parameter (voltage, current, impedance, and/or power).

Review Student Learning Outcomes (SLOs) (<http://www.mtsac.edu/instruction/outcomes/sloinfo.html>) for this program.

### Required Courses

VOC EL11	Technical Applications in Microcomputers
VOC EL12	Computer Simulation and Troubleshooting
VOC EL50A	Electronic Circuits (DC)
VOC EL50B	Electronic Circuits (AC)
VOC EL51	Semiconductor Devices & Circuits
VOC EL53	Communications Systems
VOC EL55	Microwave Communications
VOC EL56	Digital Electronics
VOC EL61	Electronic Assembly and Fabrication
VOC TCH60	Customer Relations for the Technician

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