

## Electronics Technology

Award Type: **Associate in Applied Science**  
 Effective First Year/Term: 2004 Fall  
 Overall G.P.A.: 2.00

Initiating College: **Mesa Community College**  
 Program Availability: College Specific  
 Total Credits: 71-72

Major Code: **3220**  
 Faculty Initiator:

CIPS Code: 15.03.03  
 Instructional Council: Applied Technology (57)

Development Date:  
 District Curriculum Committee Online Agenda Date:  
 MCCCDD Governing Board Approval Date: 5-27-03

**Description:** The Associate in Applied Science (AAS) in Electronics Technology prepares students to work as electronics technicians, manufacturing supervisors, test equipment specialists, prototype fabricators, and in other positions in firms that specialize in electronic design, manufacturing, service, and development. The program provides a broad algebra-based background and emphasizes current needs and trends in the electronics industry. The AAS program combines coursework in electronics technology with a General Education curriculum.

**Program Notes:**

+ indicates course has prerequisites and/or corequisites.  
 Students must earn a grade of "C" or better for each course listed in the "Required Courses" area.

**Admission Criteria: None**

**Program Prerequisites: Credits: 3**

ELE101	Beginning Algebra for Technology	3
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**Required Courses: Credits: 54**

ELE105	Algebra-Trigonometry for Technology	5
ELE111	Circuit Analysis I	4
ELE112	Circuit Analysis II	4
ELE121	Solid-State Devices and Circuits I	4
ELE131	Digital Logic and Circuits	3
ELE181	Computer Programming for Technology	3
ELE222	Solid State Devices & Circuits II	4
ELE241	Microprocessor Concepts	4
ELE243	Microprocessor Applications	3
ELE251	Electronic Measurements	3
ELE261	Communication Systems	3
ELE263	Digital Data Communications	4
GTC104	Manufacturing Processes	4
GTC106AA	Industrial Safety	2
GTC185	Electro-Mechanical Devices	4

**Restricted Electives: None**

**General Education Requirements: Credits: 17-18**

**CORE: Credits: 12**

First-Year Composition	
+ Any approved General Education course in the First Year Composition area	6
Oral Communication	
Any approved General Education course in the Oral Communication area	3
Critical Reading	
Any approved General Education course in the Critical Reading area OR Equivalent by assessment	3
Mathematics	
Met by ELE105, in Required Courses area.	0

**DISTRIBUTION: Credits: 5-6**

Humanities & Fine Arts	
Any approved general education course in the Humanities and Fine Arts Area	2-3
Social and Behavioral Sciences	
Any approved general education course from the Social and Behavioral Sciences Area PSY125 Leadership and Group Dynamics PSY125 is recommended.	3
Natural Sciences	
Met by ELE111, ELE112, ELE121, ELE131 in Required Courses area.	0

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**Program Competencies**

1. Demonstrate an ability to solve linear algebraic equation. (ELE105)
2. Use algebraic and trigonometric functions to solve electronic problems. (ELE105)
3. Apply Ohm's and Kirchhoff's laws to the solution of DC circuits and networks. (ELE111)
4. Apply Kirchhoff's laws in conjunction with phasor concepts to solve AC circuits and networks. (ELE112)
5. Apply small signal analysis to bipolar and field-effect transistor circuits, and multistage amplifiers. (ELE121)
6. Apply the concept of Boolean algebra to the generation and reduction of logic circuits. (ELE131)
7. Demonstrate the ability to design and construct an electronic circuit board and enclosure. (ELE173)
8. Use the operational amplifier as a linear functional block. (ELE222)
9. Use assembly language to program a microprocessor. (ELE241)
10. Analyze and discuss input/output techniques necessary for interfacing keyboards, displays, and stopper motors to a microprocessor. (ELE243)
11. Properly use standard electronic test equipment in the laboratory environment. (ELE251)
12. Describe sideband and bandwidth characteristics of FM and AM transmitted waveforms. (ELE261)
13. Describe the operation and salient characteristics of asynchronous and synchronous, modems. (ELE263)
14. Identify the processes of machining, forming, casting, joining (assembly), and conditioning as they relate to the conversion of materials to finished products. (GTC104)
15. Develop an appreciation of safe work habits. (GTC106AA)
16. Describe the operation and application of various electromechanical devices. (GTC185)

