

Electrical Technology – Specialization in Mechatronics

Associate of Applied Science Degree

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Length: Four semesters (two years)

Purpose: The Associate of Applied Science Degree in Electrical Technology – Specialization in Mechatronics is designed to prepare students for employment upon graduation as electrical technicians with emphasis on installation, power distribution, controls, programmable controls, mechanical systems and the maintenance of industrial machinery.

Occupational Objectives: Basic Electrician, Electrical/ Electronic Technician, Electro-Mechanical Installer/Representative, Industrial Maintenance Technician, Industrial Technical Sales, Industrial Field Service, Maintenance Supervisor

Admission Requirements: A student eligible for admission to the College can normally be considered for admission to the Electrical Technology – Specialization in Mechatronics curriculum. Proficiency in high school English and mathematics is required. Direct enrollment guidelines using either multiple measures or informed placement will determine a student’s placement into college-level English and mathematics courses.

Program Requirements: The Electrical Technology Degree is a two-year program with two-thirds of the program content in electrical and mechanical courses, and the remaining one-third consists of math, social sciences, English, humanities, and physical education. The graduate will be awarded the Associate of Applied Science in Electrical Technology upon satisfactory completion of the two-year program. Course content will include the theoretical concepts and practical applications as they pertain to industry needs.

| Course Number | Course Title | Lecture Hours | Lab Hours | Credits |
|---------------------------------|--|---------------|-----------|-----------|
| First Semester (Fall) | | | | |
| DRF 161 | Blueprint Reading | 1 | 2 | 2 |
| ELE 157 | Electricity Fundamentals | 3 | 6 | 6 |
| MEC 140 | Introduction to Mechatronics | 2 | 2 | 3 |
| SDV 101 | Orientation to College Success | 1 | 0 | 1 |
| SAF 130 | Industrial Safety – OSHA 10 | 1 | 0 | 1 |
| Total | | 8 | 10 | 13 |
| Second Semester (Spring) | | | | |
| MTH 111 | Basic Technical Mathematics | 3 | 0 | 3 |
| ENG 111 or ENG 115 | College Composition I or Technical Writing | 3 | 0 | 3 |
| ITE 100 | Introduction to Information Systems ¹ | 3 | 0 | 3 |
| ELE 141 | DC & AC Machines | 3 | 3 | 4 |
| IND 243 | Principles and Apps. of Mechatronics | 2 | 2 | 3 |
| Total | | 14 | 5 | 16 |
| Third Semester (Fall) | | | | |
| EEE | General Education Elective | 3 | 0 | 3 |
| ELE 233 | Programmable Logic Controllers I | 2 | 3 | 3 |
| MEC 161 | Hydraulics & Pneumatics | 2 | 2 | 3 |
| ELE 245 | Industrial Wiring | 2 | 2 | 3 |
| EEE | Social Science Elective | 3 | 0 | 3 |
| Total | | 12 | 7 | 15 |

| Course Number | Course Title | Lecture Hours | Lab Hours | Credits |
|---|-------------------------------------|---------------|-----------|-----------|
| Fourth Semester (Spring) | | | | |
| ELE 234 | Programmable Logic Controllers II | 2 | 3 | 3 |
| ELE 225 | Electrical Control Systems | 3 | 3 | 4 |
| PED | Physical Education | 0 | 2 | 1 |
| INS 232 | Systems Troubleshooting | 2 | 3 | 3 |
| ELE 175 | Ind. Solid State Devices & Circuits | 2 | 3 | 3 |
| EEE | Humanities Elective | 3 | 0 | 3 |
| Total | | 12 | 14 | 17 |
| Fifth Semester (Summer) | | | | |
| WEL 110 | Welding Processes | 2 | 3 | 3 |
| ELE 132 | National Electrical Code II | 3 | 0 | 3 |
| Total | | 5 | 3 | 6 |
| Total Minimum Credits for AAS Degree | | | | 67 |

Footnote:

¹ITE 115, ITE 119, or ITE 152 are acceptable substitutes

Students are urged to follow the [recommended pathway](#) for this degree when choosing electives.

Additional approved humanities and social science electives are listed at <http://www.vhcc.edu/GenEdCore>.