# MECHATRONICS I CERTIFICATE IN APPLIED SCIENCE

## Program Description

This program is designed to teach the skills required for the mechatronics technician in the 21st century's high-tech world of automated manufacturing. The program trains students in industrial environments using electrical, electronic and mechanical applications to identify and troubleshoot Mechatronics systems and repair automated manufacturing equipment, programmable logic controllers (PLCs) and robotics. This is a new interdisciplinary field involving control systems, electronic systems, computers, robotics and mechanical systems.

Courses taken under this certificate can be applied toward the associate degree program.

The Mechatronics Level 1 Certificate develops basic foundational skills and understanding in electrical, mechanical, fluid power and automation control commonly found in the industrial manufacturing environment.

## Mission Statement

The Mechatronics program mission, to produce students who are ready for today's advanced manufacturing jobs, furthers the college's mission to transform students' lives through world-class education in a field that has seen significant growth in our community.

## Entrance Requirements

High school diploma or GED

## Type of Program

Day or evening

## Requirements for Completion

This program requires a minimum grade of "C" in all concentration courses.

## Employment Opportunities

Students who successfully complete this course of study may be employed by high-tech industries.

Visit our web page at https://www.gvltec.edu/mechatronics/.

## Recommended Program Schedule

Listed below is the ideal grouping of courses in order by semester. This plan assumes a full-time schedule. Note, however, that many variables can affect this plan, and not every course is offered every semester. Please see your advisor to map out your own personalized progression toward graduation.

**Note:** Please contact your advisor for recommended evening schedules.

| First Semester | | Hours |
|---|---|---|
| EEM 117 | AC/DC Circuits I | 4 |
| IMT 112 | Hand Tool Operations | 3 |
| MAT 170 | Algebra, Geometry, and Trigonometry I [1] | 3 |
| IMT 131 | Hydraulics and Pneumatics | 4 |
| | **Total Semester Hours** | **14** |
| **Second Semester** | | |
| AMT 105 | Robotics and Automated Control I | 3 |
| EEM 118 | AC/DC Circuits II | 4 |
| EEM 271 | Sensors and System Interfacing | 2 |
| MEC 130 | Motor Controls | 4 |
| | **Total Semester Hours** | **13** |
| **Third Semester** | | |
| IMT 104 | Schematics | 2 |
| MFG 110 | Introduction to Manufacturing CAD | 3 |
| IMT 161 | Mechanical Power Applications | 4 |
| | **Total Semester Hours** | **9** |
| | **Total Required Credit Hours** | **36** |

[1] Recommend MAT 110 College Algebra in lieu of MAT 170 Algebra, Geometry, and Trigonometry I, if placement allows. A minimum grade of a "C" is required.