

# ELECTROMECHANICAL ENGINEERING TECHNOLOGY - MECHATRONICS (EMTY)

## Take a deep dive into mechatronics and shape a simpler, smarter future

Unlock a future where engineering, electronics, and software converge. Mechatronics empowers you to merge mechanical engineering and electronics with elements of computer programming, automation, robotics, and telecommunications, enabling you to craft cutting-edge technology. You'll work independently and in groups to build the self-directed study and teamwork skills needed to perform successfully in the workplace.

Use computer-aided design (CAD) to create, analyze, and optimize mechanical components and assemblies in 2D and 3D, then go a step further and make your design a reality in our machining and fabrication labs. You'll have opportunities to work on applied research projects and hone your skills with a capstone project. Graduates with the technology advanced diploma may be eligible to register as a Certified Engineering Technologist (C.E.T.) with the Ontario Association of Certified Technicians and Technologists (OACETT).

## Program highlights

- State-of-the-art mechatronics lab with access to 3D printing and CNC machining
- Computer-aided design (CAD) tools like AutoCAD and SolidWorks
- Option for grads to study at a university Ireland for 1 year, then apply for their Professional Engineer (P. Eng.) designation in Canada
- Grads may be eligible to register as a Certified Engineering Technologist (C.E.T.) with the Ontario Association of Certified Technicians and Technologists (OACETT)
- Common first and second year with Cambrian's Electromechanical Engineering Technician - Mechatronics program
- Capstone project puts your skills and knowledge into action

## Program of study for 2024-25 Academic Year

Semester 1		Credits
CAD 1001	Engineering Graphics <sup>1</sup>	3
ELC 1013	Electrical Fundamentals <sup>1</sup>	4
ENG 1002	College Communications	3
MEC 1000	Mechatronics I <sup>1</sup>	4
MEC 1002	Introduction to Metrology and Geometric Dimensioning	3
MEC 1003	Engineering Materials	3
MTH 1050	Algebra I	3
<b>Credits</b>		<b>23</b>
Semester 2		Credits
CAD 1003	Solid Modeling <sup>1</sup>	3
ELC 1215	Motor Control Fundamentals <sup>1</sup>	4
FAB 1000	Fabrication Processes <sup>1</sup>	4
MEC 1001	Mechatronics II <sup>1</sup>	4
MTH 1250	Algebra II	3
MCH 1005	Introduction to Fluid Power	4

One General Education course. <sup>2</sup>		3
<b>Credits</b>		<b>25</b>
Semester 3		
ELN 2320	Power Electronics I <sup>1</sup>	5
MTH 2332	Applied Calculus	3
MEC 2425	PLC Basic Programming	4
ENG 1754	Technical Communication	3
MCH 1001	Mechanics <sup>1</sup>	4
MTH 2325	Technical Math III	3
One General Education course. <sup>2</sup>		3
<b>Credits</b>		<b>25</b>
Semester 4		
CMP 1015	Intermediate PLC <sup>1</sup>	3
MCH 1002	Thermodynamics	3
WHS 1002	Workplace Safety and Standards	3
CAD 1004	Advanced Solid Modelling <sup>1</sup>	4
INT 1001	Instrumentation I	3
One General Education course. <sup>2</sup>		3
<b>Credits</b>		<b>19</b>
Semester 5		
CMP 1026	Data Communication	4
MCH 1004	Manufacturing Systems	4
MEC 1004	Mechatronics Design <sup>1</sup>	4
CMP 1063	Programming	4
MTH 1180	Advanced Calculus	4
MEC 1010	Automation System Design	4
<b>Credits</b>		<b>24</b>
Semester 6		
CMP 1016	Advanced PLC <sup>1</sup>	4
MEC 1011	Automation Capstone Project	4
CMP 1027	Data Analysis Tools	4
MCH 1003	Advanced Mechanics	3
MCH 1006	Quality Assurance	3
<b>Credits</b>		<b>18</b>
<b>Total Credits</b>		<b>134</b>

<sup>1</sup> Course with Lab component.

<sup>2</sup> For more information regarding General Education courses, click here (<https://cambriancollege.ca/general-electives/>).

## Admission requirements

For graduates of the new curriculum (OSS): Ontario Secondary School Diploma (30 credits) or equivalent or mature student status, including:

- Any grade 12 English (U) or (C)
- Any grade 12 mathematics (C) or (U) (MCT4C is highly recommended)

## Additional admission requirements

### Recommendations

- Any grade 11 physics (U) or grade 12 physics (C) or (U)

## Program delivery

### 2024-2025

#### Fall term start

SEMESTER 1: Fall 2024  
SEMESTER 2: Winter 2025  
SEMESTER 3: Fall 2025  
SEMESTER 4: Winter 2026  
SEMESTER 5: Fall 2026  
SEMESTER 6: Winter 2027

#### Winter term start

SEMESTER 1: Winter 2025  
SEMESTER 2: Spring 2025  
SEMESTER 3: Fall 2025  
SEMESTER 4: Winter 2026  
SEMESTER 5: Fall 2026  
SEMESTER 6: Winter 2027

## Specific program pathways

### College or university degree opportunities

If you are a graduate of this program, you may continue your studies at a college or university and you may receive credit(s) for your prior college education. Refer to Cambrian's college and university agreement (<https://cambrian.s123.ca/supports-services/articulation-agreements/>) details for further information.

## Employment opportunities

Graduates are prepared for employment opportunities as:

- Automation technologist/specialist
- Electromechanical design technologist
- PLC programmer
- Robotics programmer
- Control designer/technologist
- Custom machine design and/or integration

## Contacts

### James Allman, P.Eng.

Program Coordinator  
705-566-8101, ext 6284  
[james.allman@cambriancollege.ca](mailto:james.allman@cambriancollege.ca)

### INTERNATIONAL ADMISSIONS

[mailboxadmissions@cambriancollege.ca](mailto:mailboxadmissions@cambriancollege.ca)