Electronics and Embedded Systems Development
School of Advanced Manufacturing, Science, and Transportation
ESD3 - Electronics and Embedded Systems Development

This program has been permanently suspended.

Program Description
Electronics and Embedded Systems Development is a two-year Ontario college graduate program designed to build on students' theoretical knowledge on electrical engineering and provides training on electrical technologies, embedded systems and computer-aided design. Graduates will be prepared for the workforce after completing a capstone project where students have the opportunity to design, implement and manage real-world solutions.

Document of Recognition
Ontario College Graduate Certificate

Program Type
Ontario College Graduate Certificate

Learning Outcomes
The graduate has reliably demonstrated the ability to:

- Provide a customer solution that meets quality standards and satisfies customer requirements for embedded systems products
- Solve complex embedded systems problems through research, experimentation, integration of computer hardware and software, and the use of electronic instrumentation
- Design, develop, test, configure and maintain electronic and embedded systems
- Integrate engineering skills and knowledge with current business strategies to provide cost effective and economically sound embedded solutions to product realization problems
- Adhere to Canadian professional, ethical, legal codes of practice and intellectual property rights to comply with industrial, labour and environmental regulations.
- Communicate effectively with diverse teams to disseminate ideas, requirements, implementations, findings and outcomes to complete embedded systems projects
- Plan, implement and manage electronic and embedded systems projects in response to stakeholder and industry needs and requirements
- Collaborate within engineering teams to complete electronic and embedded systems projects that satisfy business and sustainability requirements and practices

Career Opportunities
Graduates of Fanshawe's Electronics and Embedded Systems Development program will be positioned to pursue careers with employers from traditional electronic engineering companies to those focusing on Industry 4.0 solutions and the development of IoT innovations. Graduates can expect to be employed in the following areas:

electronics engineer
firmware developer
embedded systems developer
embedded hardware developer/designer
embedded software developer/designer
embedded solution tester
quality control professional
Did you know Fanshawe consistently ranks high in graduation employment rates among large colleges in Ontario?

Here are some examples of career opportunities for graduates of Fanshawe's Electronics and Embedded Systems Development program:

Embedded Software Developer
Responsible for the full development cycle of new products.

Firmware Engineer
Responsible for the development and implementation of software.

Embedded Software Engineer

Design and implement software of embedded devices and systems throughout all phases of development and deployment.

Admission Requirements
A Three-Year College Diploma or a Degree in Electrical or Electronic Engineering
OR
Successful completion of Second or Third Year of Electrical, Electronic Engineering, or Computer Engineering at a Canadian Engineering Accreditation Board approved Canadian University or equivalent international credentials
OR
Other relevant disciplines may also be considered, such as software engineering, computer science and others that offer a significant degree of electronics and software development in their curriculum.

Approximate Costs
Fee details are available at www.fanshawec.ca/fees

Other Information
Students wishing to enter Level 5 of the Manufacturing Engineering Technology (Co-op) program, must first successfully complete Levels 1 through 4 of the Manufacturing Engineering Technician program. Students that have successfully completed the Manufacturing Engineering Technician program, and wish to continue into the Manufacturing Engineering Technology (Co-op) program, must complete an "Application for Program Transfer" form available from the Office of the Registrar, Room E1012. A CONNECT lab fee of $50.00 per academic term is included in the Additional Program Fees stated in the Fee Schedule. This fee helps cover costs associated with the delivery of the CONNECT mobile computing program.

Contact
School of Advanced Manufacturing, Science, and Transportation

Campus Codes and Intakes
- Program Code: ESD3
- Campus Code: LC (LC - London)
- September Admission
- 15 week terms
- Academic Calendars available at www.fanshawec.ca/academicdates

Applicant Selection Criteria
- Where the number of eligible applicants exceeds the available spaces in the program, the Applicant Selection Criteria will be:
- Preference for Permanent Residents of Ontario
- Receipt of Application by February 1st (After this date, Fanshawe College will consider applicants on a first-come, first-served basis until the program is full)
- Achievement in the Admission Requirements

Recommended Personal Preparation
Academic courses in electronics, software engineering, computer engineering, electrical engineering, computer science.

Program Curriculum

Level 1

Take all of the following Mandatory Courses:

ACAD-6003	Strategies for Technology Students	2.5
MATH-6003	Math for Embedded Technology	3
LAWS-6048	Law & Ethics in Embedded Systems Techolo	3
COMM-6027	Industrial Communications	4
COMP-6059	Operating Systems	2
COMP-6060	Systems Programming	3

Level 2

Take all of the following Mandatory Courses:

ELNC-6006	Embedded Systems 1	4
ELNC-6004	Electronic Components & Processes	3
ELNC-6014	Digital Logic & Devices	3
ENTP-6005	Business & Sustainability in Technology	3
ELNC-6005	Electronic Documentation & Graphics	3

Level 3

Take all of the following Mandatory Courses:

ELNC-6007	Embedded Systems 2	4
ELNC-6010	Circuits & Interfacing	3
ELNC-6013	Embedded Network Protocols	3
COMP-6061	Real Time Operating Systems	3
TELE-6001	Telecommunications	3

Level 4

Take all of the following Mandatory Courses:

ELNC-6011	Embedded Systems 3	4
COMP-6057	Application Development	2
COMP-6062	Web Interfaces for Hmi	3
ELNC-6012	Practical Project	4
COMM-6028	Project Communications	3

Program Residency

Students Must Complete a Minimum of 17 credits in this program at Fanshawe College to meet the Program Residency requirement and graduate from this program