

COMPUTER PROGRAMMING - INTERNET OF THINGS (CPTD)

Make everything smarter and connected

The fourth industrial revolution is here! Skilled professionals who know how to interface hardware, software, and the cloud are in high demand. CPTD is an innovative programming diploma that covers a range of skills with a unique focus on the Internet of Things (IoT).

With the help of powerful tools in IoT programming, data analytics, and artificial intelligence, the Internet of Things is a network of physical objects – or “things” – embedded with sensors, software, and other technologies that connect and exchange data over the internet. These “things” include household items such as smart thermostats and fitness trackers, as well as complex industrial machinery.

From Arduino projects to industrial IoT, this program offers a hands-on learning journey in programming and the cutting-edge field of the Internet of Things.

This program is delivered in-person on weekends at our Toronto campus (<https://cambriancollege.ca/visit-cambrian/locations/toronto-campus/>); during the week, classes will be delivered online in synchronous (<https://cambriancollege.ca/program-delivery/>) and asynchronous (<https://cambriancollege.ca/program-delivery/>) formats.

Program highlights

- One-of-a-kind IoT and programming diploma
- Blend of courses in computer programming, IoT technology, networking, artificial intelligence, and data science
- Programming languages, algorithmic thinking, machine learning, and application development skills
- Design and implementation of robotic devices that sense and intelligently act on their environment
- Develop “smart things” for the mining, health, entertainment, transportation, and home automation industries
- Pathways to computer science degrees and graduate certificates in artificial intelligence, cybersecurity, mobile application development, data analytics, business analysis, and others
- Graduates of this program may continue their studies at Laurentian University and receive a Bachelor of Computer Science (B.COSC) in as little as 2 years. Refer to Laurentian’s Transfer Agreements (<https://laurentian.ca/admissions/undergraduate/college-transfer-applicants/>) for further information.

Program of study for 2025-26 Academic Year

Semester 1		Credits
ENG 1002	College Communications	3
IOT 1025	Operating Systems	3
IOT 1100	Electrical Electronic Circuits	4
IOT 1005	Discrete Math	3
IOT 1001	Programming and Logic	4
IOT 1105	Relational Databases	4
IND 1025	Indigenous Business Workshop	1
Credits		22
Semester 2		
IOT 1023	Programming IoT Devices	4

IOT 1026	Object Oriented Prog	4
IOT 1027	Beyond Relational Databases	3
IOT 1103	Introduction to Networking	3
MTH 1012	Applied Math	3
QMM 1233	Statistics	3
One General Elective Course ¹		3
Credits		23
Semester 3		
IOT 1012	IoT App Program Interfaces	4
IOT 1029	Computer Architecture Assembly	3
IOT 1102	IoT Protocols and Networks	3
IOT 1120	Data Analytics	3
ISP 3660	Multiplatform App Development	4
STY 1003	Intro to Software Engineering	3
One General Elective Course ¹		3
Credits		23
Semester 4		
IOT 1010	Data Structures	3
IOT 1101	Industrial Internet of Things	4
IOT 1104	IoT Security	3
IOT 1122	AI and Machine Learning	4
IOT 1125	IoT Capstone Project	3
PRM 1211	Software Project Management	3
One General Elective Course ¹		3
Credits		23
Total Credits		91

¹ 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 (C) or (U)
- Any grade 12 Mathematics (C) or (U)

Note: A minimum of **60%** is required in the Mathematics prerequisite course.

Program delivery

2025-2026

Fall term start

SEMESTER 1: Fall 2025
SEMESTER 2: Winter 2026
SEMESTER 3: Spring 2026
SEMESTER 4: Fall 2026

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://cambriancollege.ca/admissions/academic-planning/pathways/>) details for further information.

Employment opportunities

Graduates are prepared for employment opportunities as:

- Programmers
- IoT System Designers
- Networks Technicians
- Pi System Administrators
- IoT Data Specialists