

COMPUTER PROGRAMMING - INTERNET OF THINGS (CPIN)

Make everything smarter and Internet-connected

The fourth industrial revolution is here, and it demands skilled professionals who not only know how to develop programs, but who can also interface hardware and “the cloud”, or the Internet. This innovative program covers a range of computer programming skills with a unique focus on the Internet of Things (IoT). You will learn algorithms, application and IoT programming, data management, networks, and analysis, in addition to machine learning foundations.

IoT produces huge amounts of data which has become known as the “new oil”. Equipped with proper data analytics skills, we can add value to industries and businesses.

From Arduino home automation projects to industrial IoT, this program offers an enjoyable hands-on learning journey in computer programming with a special focus on the cutting-edge field of the Internet of Things.

Program highlights

- One-of-a-kind IoT and programming diploma
- Blend of courses in computer science, IoT engineering, and data analysis
- Programming languages, algorithmic thinking, machine learning, and application development skills
- Design and implement robotic devices that sense and intelligently act in their surroundings
- Make “things” for mining, services, transportation, and homes reachable over the Internet
- Pathways to computer science degrees and graduate certificates in AI, cybersecurity, mobile application development, data analytics, business analysis, and others

Program of study for 2024-25 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 I	3
IOT 1001	Programming and Logic	4
IOT 1105	Relational Databases	4
Credits		21
Semester 2		Credits
IOT 1103	Introduction to Networking	3
IOT 1006	Discrete Math II	3
IOT 1023	Programming IoT Devices	4
IOT 1026	Object Oriented Prog	4
IOT 1027	Beyond Relational Databases	3
QMM 1233	Statistics	3
One General Education course. ¹		3
Credits		23
Semester 3		Credits
IOT 1029	Assembly Language	3

IOT 1009	Mobile Application Development	3
IOT 1002	Systems Analysis and Design	4
IOT 1012	IoT App Program Interfaces	4
IOT 1120	Data Analytics	3
IOT 1102	IoT Protocols and Networks	3
One General Education course. ¹		3

Credits **23**

Semester 4

IOT 1104	IoT Security	3
IOT 1010	Data Structures	3
IOT 1101	Industrial Internet of Things	4
IOT 1021	IoT Project	4
IOT 1122	Machine Learning	4
One General Education Course. ¹		3

Credits **21**

Total Credits **88**

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)

Program delivery

2024-2025

Fall term start

SEMESTER 1: Fall 2024
SEMESTER 2: Winter 2025
SEMESTER 3: Fall 2025
SEMESTER 4: Winter 2026

Winter term start

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

Contacts

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INTERNATIONAL ADMISSIONS

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