

# ARTIFICIAL INTELLIGENCE (AIG)

## About the Program

Take advantage of limitless possibilities with Artificial Intelligence (AI) and help solve the most critical question faced by today's businesses: how do we make sense of our data and use it to our strengths?

This eight-month, postgraduate certificate tailored for Computer Science, Computer Programming and Software Development graduates will equip you with the hands-on skills and theoretical knowledge needed to transform data into strategic, evidence-based business decisions for companies.

In this program, you will explore critical concepts and skills like machine learning algorithms, cloud technology, data visualization and advanced AI, including generative AI and prompt engineering. You'll also have the opportunity to gain industry exposure through an optional, work-integrated learning experience.

## Credential Awarded

Ontario College Graduate Certificate

## Duration

2 Semesters (8 Months)

## Starts

January, September

## Program and Course Delivery

This program is offered in Seneca's hybrid delivery format. Some coursework is online and some must be completed in person. Students will need to come on campus to complete in-person learning requirements.

## Skills

Throughout this program you will develop the following skills:

- Create machine learning algorithms to help to identify patterns, provide insights, recommend actions, or perform tasks autonomously on behalf of stakeholders
- Communicate complex materials using data visualization
- Design and implement cloud solutions that align with business needs, scalability, and performance requirements
- Build AI models to identify patterns, provide insights, recommend actions, or perform tasks autonomously on behalf of stakeholders

## Work Experience

### Optional Work Term

Students meeting all academic requirements may have the opportunity to complete an optional work term(s) in a formal work environment. The work term(s) is similar in length to an academic semester and typically involves full-time work hours that may be paid or unpaid. In programs with limited work term opportunities, additional academic requirements and

a passing grade on a communication assessment may be required for eligibility. Eligibility for participation does not guarantee a work position will be secured. Additional fees are required for those participating in the optional work term stream regardless of success in securing a work position.

Review eligibility requirements for work-integrated learning (<https://www.senecapolytechnic.ca/employers/seneca-works/work-integrated-learning/eligibility.html>)

## Your Career

Graduates of the program can explore the following career options:

- Machine learning developer
- Machine learning consultant
- Machine learning analyst
- Artificial intelligence consultant
- Artificial intelligence analyst
- Artificial intelligence developer

## Program of Study

Course Code	Course Name	Weekly Hours
<b>Semester 1</b>		
AIG100	Machine Learning	4
AIG110	Artificial Intelligence	4
AIG120	Strategic Evidence Based Decision Making	4
AIG130	Cloud Computing for Machine Learning	4
AIG140	Advanced Data Visualization	4
AIG150	Data Preparation and Governance	4
<b>Semester 2</b>		
AIG200	Capstone Project	4
AIG210	Computer Vision	4
AIG220	Deep Learning	4
AIG230	Natural Language Processing	4
AIG240	Robotics	4

## Program Learning Outcomes

This Seneca program has been validated by the Credential Validation Service as an Ontario College Credential as required by the Ministry of Colleges and Universities.

As a graduate, you will be prepared to reliably demonstrate the ability to:

- Implement AI algorithms (classical and deep learning techniques) to improve processes in businesses and organizations.
- Develop presentation materials for a range of audiences, using visualization techniques, and communications technologies for AI solutions and strategies.
- Adhere to ethical and legal guidelines, data governance processes, fairness principles and legislation to ensure AI systems are inclusive, explainable, have a positive purpose and use data responsibly.

- Evaluate industry trends and emerging technologies in artificial intelligence and machine learning to improve AI systems and maintain currency and relevancy in the field.
- Design and evaluate artificial intelligence and machine learning algorithms and models to solve problems and meet the specified needs of a client or stakeholder.
- Apply project management principles and methodologies to manage the timelines, cost, scope and other resources of artificial intelligence projects.
- Recommend the system infrastructure, such as cloud computing, that meets the needs of an Artificial Intelligence application.
- Collaborate in project development and lead discussions to articulate data results and support diverse teams.

## Admission Requirements

- Postsecondary diploma or degree in computer programming, software development or a related discipline.
- Postsecondary diploma or degree in an unrelated discipline with two years of demonstrable software development/engineering experience (or completion of computer programming courses) may be considered. A resume and references must be provided.
- A minimum of three years of related work experience in computer programming or software development/engineering detailed in a professional resume with a letter of intent and references may be considered.
- English proficiency (<https://www.senecapolytechnic.ca/registrar/canadian-applicants/admission-requirements/english-proficiency.html>) for graduate certificates.

Canadian citizens or permanent residents educated outside of Canada must provide a World Education Services (WES) or ICAS Canada credential evaluation.

**Recommended:** Although not required for admission, courses in introductory-level calculus and statistics are strongly recommended for success in the program as this program has a strong focus on Mathematics.

## International Student Information

International admissions requirements vary by program and in addition to English requirements (<https://www.senecapolytechnic.ca/international/apply/how-to-apply/admission-requirements/english-requirements.html>), programs may require credits in mathematics, biology, and chemistry at a level equivalent to Ontario's curriculum, or a postsecondary degree or diploma, equivalent to an Ontario university or college. Program-specific pre-requisite courses and credentials are listed with the admission requirements on each program page. To review the academic requirements please visit: Academic Requirements - Seneca, Toronto, Canada ([senecapolytechnic.ca](https://www.senecapolytechnic.ca/international/apply/how-to-apply/admission-requirements/academic-requirements.html)) (<https://www.senecapolytechnic.ca/international/apply/how-to-apply/admission-requirements/academic-requirements.html>).

## Pathways

As a leader in academic pathways, we offer a range of options that will allow you to take your credential further in another Seneca program or a program at a partner institution.

To learn more about your eligibility, visit the Academic Pathways (<https://www.senecapolytechnic.ca/pathways.html>) web page.

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