Notice of Intent for New Degree/Diploma Programs

The Notice of Intent (NOI) is completed after Program Ideation once it is determined that a New Program is appropriate. The NOI provides additional detail regarding the nature and aspirations of a proposed program. Please submit the completed NOI to ciqe@ontariotechu.ca. The NOI will be presented to the Academic Resource Committee for evaluation and recommendation to the Provost.

Applicant Information

Faculty: Faculty of Engineering and Applied Science
Faculty Lead: Dr. Akramul Azim
Program Level: ☑ Graduate ☐ Undergraduate
Program Name and Degree Designation: Graduate Diploma (G.Dip) in AI Engineering

Is this program in collaboration with another faculty? No
If yes, which Faculty? N/A
Modality: ☐ Online ☑ Hybrid
Will this program have an experiential learning component? ☑ Yes ☐ No

If yes, please provide details of experiential learning, including potential partners and any anticipated impact on existing resources or placements in other programs.

The AI Engineering Graduate Diploma is project-based coursework focused on AI-based software and systems. Students will apply AI Engineering tools and technologies on different engineering use cases.

Assignments and projects are embedded within existing graduate courses and do not require additional facilities beyond those already available in the Faculty of Engineering and Applied Science. This approach builds both technical and professional competencies in AI-based systems design and development, aligning with Ontario Tech's emphasis on AI.

Overview of Proposed Program

Please briefly describe the proposed program.

The AI Engineering Graduate Diploma incorporates extensive experiential learning through practical, project-driven coursework centered on the development of AI-enabled software and systems. Throughout the program, students engage directly with contemporary AI engineering tools, platforms, and methodologies as they work on a range of engineering-focused use cases.
All assignments and projects are integrated into the existing suite of graduate courses, leveraging current infrastructure and resources within the Faculty of Engineering and Applied Science. No additional facilities are required, ensuring a streamlined and sustainable delivery model.
This learning structure not only strengthens students' technical proficiency in designing, implementing, and evaluating AI-based systems, but also enhances their professional skills in collaborative problem-solving, project management, and responsible technology development. The diploma aligns closely with Ontario Tech University's strategic focus on artificial intelligence, preparing graduates to contribute effectively to emerging AI-driven industries and research initiatives.

Students complete four(4) graduate-level courses (12 credits total) from the list below, providing both theoretical understanding and practical training in AI-based engineering:

- ENGR5775G - Knowledge Disc. & Data Mining
- ENGR5785G - Real-Time Data Analytics IoT
- ENGR5940G - Intelligent Control Systems
- ENGR 5010G - Advanced Optimization
- Optional Replacement:
  - Related ENGR 5005G - Special Topics and/or Senior Undergraduate course (upon approval by the Graduate Program Director and relevant to the scope)

The diploma can be completed on a part-time or full-time basis and is fully stackable into the MASc or MEng in ECE programs. It provides a flexible pathway for professionals seeking to upskill in AI Engineering or transition into leadership roles in smart-industry settings.

Describe how the principles of Equity, Diversity, Inclusion, and Decolonization have been considered.

The AI Engineering Graduate Diploma integrates equity, diversity, inclusion, and decolonization principles by promoting equitable access through hybrid delivery and flexible scheduling. The program encourages participation from women, Indigenous peoples, and other underrepresented groups in engineering through targeted outreach and mentorship opportunities. Its curriculum highlights global perspectives in AI Engineering and design, emphasizing inclusive innovation and workforce transformation. Course projects and case studies reinforce responsible engineering practices and the social dimensions of AI and Machine Learning, ensuring students appreciate the human and ethical aspects of technological change.

If this program contains any indigenous content, please provide information regarding consultation with the Indigenous Education Advisory Circle (IEAC).

The program currently does not include specific Indigenous content. However, future iterations may incorporate case studies on inclusive AI-based engineering design, and technology development in partnership with Indigenous communities. Any inclusion of Indigenous content will be preceded by consultation with the Indigenous Education Advisory Circle (IEAC) to ensure cultural accuracy and alignment with Ontario Tech's protocols.

For more information on how Indigenous content is defined at Ontario Tech University and how to consult with the Indigenous Education Advisory Circle (IEAC), please refer to the Protocol for Consultation with the Indigenous Education Advisory Circle.

Evidence of Need

List all other Ontario universities that offer similar programs.

There isn't an AI Engineering graduate diploma across Ontario, but there are many graduate Master's and Graduate Certificate or Diploma programs in Ontario universities and colleges that are very AI-oriented or allow specialization in AI.

University	Program
Toronto Metropolitan University (TMU)	MEng in Electrical & Computer Engineering – AI Concentration

College	Program
Conestoga College	Applied Artificial Intelligence & Machine Learning (Graduate Certificate
Humber Polytechnic	Artificial Intelligence with Machine Learning (Graduate Certificate)
Fleming College	Artificial Intelligence (Graduate Certificate)
Seneca Polytechnic	Artificial Intelligence (Graduate Certificate)
Georgian College	Artificial Intelligence – Architecture, Design & Implementation (Graduate Certificate)

What is the intended applicant pool for this program and the projected enrollment?

The program is intended for engineers and technical professionals in electrical, computer and software engineering who require up-skilling in AI-based system design and development. It also targets recent graduates wishing a short, stackable credential that can ladder into the MEng or MASc in ECE. The anticipated Year 1 intake is approximately 10–15 students, with a steady-state enrolment of around 20–25 students per year (mix of part-time professionals and full-time students).

What are the trends indicating societal need for graduates in this area. Please visit *Ontario Job Futures*, *the Government of Canada Labour Market Trends website, and the Durham Workforce Authority* and Include projections for jobs in this area over the next 5 to 10 years. You may also include data from other sources, if relevant.

Ontario and Canadian labour-market data consistently indicate a growing societal need for graduates with AI engineering skills. National projections from the Canadian Occupational Projection System show strong long-term demand, with nearly 47,000 job openings expected for software-engineering–related roles over the next decade many of which increasingly require competencies in AI, machine learning, data engineering, and MLOps. Short-term government outlooks for Ontario show a balanced-to-limited forecast for traditional software roles, but sector reports from the Vector Institute highlight rapid job creation and adoption of AI across healthcare, finance, advanced manufacturing, and the public sector. Local planning documents from the Durham Workforce Authority further identify applied digital technology and AI as priority skill gaps in the region, emphasizing employer demand and the need for new training pathways. Taken together, these trends point to sustained and expanding employment opportunities over the next 5 to 10 years, with industry, government, and regional organizations all signaling an urgent need for graduates capable of developing, deploying, and managing AI-enabled systems.

Resources

What human and physical resources will be required to launch and sustain the program?

How will existing programs be impacted?

What is the marketing pitch for this program and what outlets should be used?

The AI Engineering Graduate Diploma will be delivered by existing faculty members in Electrical, Computer and Software Engineering. No new hires or additional resources are required. The program will utilize existing classrooms, laboratories, and computational facilities already supporting graduate teaching and research.

The impact on existing programs will be minimal, as the courses are part of the current graduate curriculum. The diploma consolidates these offerings into a focused, stackable credential that strengthens Ontario Tech's leadership in AI Engineering. Marketing will target engineers and professionals through the university website, professional networks, and industry partnerships.

Consultation

Provide details regarding consultations with other programs and/or Faculties at Ontario Tech University, external agencies/partners, and supporting departments (e.g. the Office of the Registrar, School of Graduate and Post-Doctoral Studies), and include information about potential collaboration or possible duplication. Include an explanation of the consultation process and a summary of the feedback provided.

Preliminary consultations were held within the Faculty of Engineering and Applied Science, including discussions with the Graduate Program Director, department faculty, and the Dean's Office. Input from the School of Graduate and Postdoctoral Studies (SGPS) will ensure alignment with Ontario Tech's graduate credential framework and stackable program structure.

Feedback confirmed that the proposed diploma complements existing MASc and MEng offerings without duplication and supports the university's strategic focus on AI. The program also aligns with ongoing collaborations and industry engagement in AI-based projects.

Has this NOI been approved by the Faculty Dean(s)? ☑ Yes ☐ No
Date Approved: December 1, 2025