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. Xianke Lin
Program Level: ☑Graduate ☐ Undergraduate
Program Name and Degree Designation: Graduate Diploma (G.Dip) in Advanced Automotive 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 Graduate Diploma in Advanced Automotive Engineering integrates experiential learning through hands-on, project-based coursework focused on vehicle systems, powertrains, dynamics, aerodynamics, and automotive materials. Students work on automotive engineering challenges, including EV powertrain modelling, chassis dynamics optimization, NVH diagnostics, CFD-aided aerodynamics, and lightweight structural design.

Experiential activities are embedded within graduate courses and utilize existing FEAS laboratories. Projects replicate industry workflows and do not require placement allocations or additional facilities beyond those already available.

No significant impact is anticipated on existing courses or experiential placements in other programs, as all activities occur within regular coursework and research-oriented project settings.

Overview of Proposed Program

Please briefly describe the proposed program.
Describe how the principles of Equity, Diversity, Inclusion, and Decolonization have been considered.
If this program contains any indigenous content, please provide information regarding consultation with the Indigenous Education Advisory Circle (IEAC).
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.

The Graduate Diploma (G.Dip) in Advanced Automotive Engineering is designed to provide engineers and industry professionals with advanced expertise in modern vehicle engineering. The program emphasizes the integration of mechanical systems, electrified powertrains, vehicle dynamics, aerodynamics, materials, and noise-vibration-harshness (NVH) to prepare graduates for leadership roles in the evolving automotive sector.

Students complete four (4) graduate-level courses (12 credits total) from the following list:

- ENGR 5300G - Automotive Engineering
- ENGR 5310G - Advanced Vehicle Dynamics
- ENGR 5330G - Automotive Powertrains
- ENGR 5340G - Automotive Noise, Vibrations and Harshness
- ENGR 5350G - Automotive Materials and Manufacturing
- ENGR 5320G - Automotive Aerodynamics

Optional Replacements (to accommodate scheduling conflicts or prerequisite pathways, with GPD approval):

- ENGR 5005G - Special Topics
- One relevant undergraduate course
- ENGR 5263G - Advanced Control
- ENGR 5970G - Advanced Power Electronics
- ENGR 5910G - Embedded Real-Time Control Systems
- ENGR 5010G - Advanced Optimization

The diploma can be completed full-time or part-time and is stackable toward both the MASc and MEng in Automotive Engineering, enabling a flexible academic pathway for professional upskilling and career advancement.

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

The program integrates EDID principles by supporting equitable access through hybrid delivery. Recruitment and outreach initiatives will encourage participation from women, Indigenous learners, and other underrepresented groups in automotive engineering. Curriculum themes reflect responsible and inclusive technology development, including sustainability, electrification, accessibility, and social dimensions of mobility. Case studies reinforce the ethical and environmental context of automotive innovation.

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

The program does not currently include Indigenous-specific content. Future program renewal may incorporate case studies on sustainable mobility solutions or engineering design in partnership with Indigenous communities. Introduction of such material would be developed only after consultation with the Indigenous Education Advisory Circle (IEAC) and in accordance 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.

While no Graduate Diploma specifically in Advanced Automotive Engineering currently exists in Ontario, similar graduate level offerings demonstrate strong demand for specialized automotive training particularly in electrification, vehicle systems, powertrains, and mobility technologies. Relevant programs include:

University	Program
University of Windsor	MEng in Automotive Engineering
Ontario Tech University	MASc / MEng in Automotive Engineering

These programs confirm sustained academic and industry demand in the automotive engineering and

mobility sector, while the proposed Graduate Diploma in Advanced Automotive Engineering fills an unmet need for a short, stackable, professionally focused credential for engineers seeking targeted upskilling without enrolling in a full master's degree.

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

The diploma targets:

- Mechanical / automotive / mechatronics / electrical engineers in the automotive and mobility sector
- Professionals transitioning toward electric vehicles, autonomous systems, and advanced powertrains
- Recent graduates seeking a short, stackable credential that ladders into the MASc or MEng

Anticipated enrollment:

- Year 1 intake: 5-10 students
- Steady state: 10-20 students per year (mix of full-time and part-time learners)

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.

Canada and Ontario are accelerating automotive transformation driven by:

- Electrification and EV powertrain development
- Autonomous and connected vehicle systems
- Lightweight materials and advanced manufacturing
- Vehicle emissions and safety regulations

Industry reports from the Government of Canada Job Bank, Ontario Job Futures, and the Durham Workforce Authority project sustained demand over the next 5-10 years for automotive engineers trained in vehicle dynamics, electrified propulsion, materials and NVH, and digital design. The G.Dip directly supports regional and national priorities by preparing graduates for employment in OEMs, Tier-1 suppliers, motorsport, consulting, and mobility technology firms.

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 program will be delivered by existing faculty members in Automotive Engineering. No new hires or additional laboratory space are required. Courses will continue to use current classroom and automotive research laboratory facilities, simulation tools, and established instructional resources.

The impact on existing programs is minimal, as the diploma consolidates existing graduate courses into a focused credential. It strengthens Ontario Tech's competitiveness and visibility in automotive engineering without altering course availability for MASc and MEng students.

Marketing will target:

- Practicing engineers and automotive professionals
- OEMs, Tier-1 suppliers, motorsport networks, and EV startups
- Alumni, LinkedIn campaigns, university website, provincial professional engineering associations

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 leadership in advanced automotive engineering.

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