Durham College of Applied Arts And Technology
Public Meeting of the Board of Governors

AGENDA

When making decisions, the Board is encouraged to consider the College's values of collaboration, diversity and inclusion, excellence, innovation, integrity, respect, and social responsibility.

Date: Wednesday, May 7, 2025

Time: 6:00 p.m.

Location: Oshawa Campus, Durham College Boardroom, A144

Timing	Item		Page No.
6:00 p.m. to 6:02 p.m.	**1.**	**Call to Order**	
6:02 p.m. to 6:04 p.m.	**2.**	**Land Acknowledgement – Governor Burgess**	
6:04 p.m. to 6:06 p.m.	**3.**	**Conflict of Interest Declarations**	
	4.	**Presentations**	
6:06 p.m. to 6:16 p.m.	4.1	Keeping the College Safe: Employee Health and Safety and Overview of Campus Safety Activities – R. Hutchinson	
6:16 p.m. to 6:20 p.m.	**5.**	**Consent Agenda**	1 to 9

Recommendation

That all items listed under the heading of consent agenda be adopted as recommended.

5.1 Approval of Public Session Agenda – May 7, 2025

Recommendation
That the public agenda for the May 7, 2025, Board of Governors meeting be approved as presented.

5.2 Approval of Public Minutes from the Board of Governors Meeting of April 9, 2025

Recommendation
That the public minutes from the April 9, 2025 Board of Governors meeting be approved as presented.

Timing	Item	Page No.

5.3 Appointment of Additional Signing Authority for Banking Purposes

Recommendation
Be it resolved that:

1. The Vice President, People, Equity and External Relations be authorized to act on behalf of the Corporation for banking purposes in accordance with the limitations outlined in College By-law No. 1 (Section 27); and,
2. That the signing authority granted to the Vice President, People, Equity and External Relations remain in effect until revoked or amended by further resolution of the Board.

5.4 Designation of Contact Person Under the Personal Health Information Protection Act, 2004

Recommendation
On behalf of Durham College, a health information custodian under the *Personal Health Information Protection Act, 2004* (the "Act"), the Board of Governors of Durham College (the "Board") wishes to designate a contact person in accordance with Section 15(2) of the Act.

Be it resolved that:

1. The Board hereby appoints the person who holds the office of Manager, Board Governance and Privacy as the contact person for Durham College under Section 15(2) of the Act, effective on May 7, 2025 and until revoked or otherwise amended by the Board; and

Timing	Item		Page No.
	2.	Any prior designations of a contact person under the Act are hereby revoked.	
	5.5	Ratification of Election Results for the Positions of Board Chair and Vice Chair for the 2025-2026 Board Year	
		Recommendation That the results of the Election for the positions of Chair and Vice Chair of the Durham College Board of Governors be ratified and,	
		1. That Lisa Allen be confirmed as the Board Chair for the 2025-2026 Board Year; and, 2. That Peter Pryce be confirmed as the Board Vice Chair for the 2025-2026 Board Year.	
6:20 p.m. to 6:25 p.m.	**6.**	**Report of the Board Chair**	
6:25 p.m. to 6:27 p.m.	**7.**	**Co-Populous Governors' Report**	
	8.	**Decision Items**	
6:27 p.m. to 6:37 p.m.	8.1	New Program of Instruction: Project Management – Information Technology, Ontario College Graduate Certificate – J. Choi and C. Italia	10 to 54
		Recommendation It is recommended to the Durham College Board of Governors:	
		That in accordance with Report BOG-2025-43 the proposed Project Management – Information Technology Ontario College Graduate Certificate program be approved.	

Durham College of Applied Arts And Technology
Public Meeting of the Board of Governors

AGENDA

Timing	Item		Page No.
6:37 p.m. to 6:47 p.m.	8.2	New Program of Instruction: Cloud and Information Technology Systems, Ontario College Diploma – J. Choi and C. Italia	55 to 97
		<u>Recommendation</u> It is recommended to the Durham College Board of Governors:	
		That in accordance with Report BOG-2025-44 the proposed Cloud and Information Technology Systems Ontario College Diploma program be approved.	
6:47 p.m. to 6:57 p.m.	8.3	New Program of Instruction: Geographic Information Systems for Data Analytics – J. Choi and C. Italia	98 to 140
		<u>Recommendation</u> It is recommended to the Durham College Board of Governors:	
		That in accordance with Report BOG-2025-45, the proposed Geographic Information Systems for Data Analytics Ontario College Graduate Certificate program be approved.	
	9.	**Discussion Items**	
6:57 p.m. to 7:07 p.m.	9.1	Strategic Mandate Agreement 2020-2025 (SMA3) Year Five Report Back – J. Choi and D. McKee Demczyk	141 to 144
7:07 p.m. to 7:17 p.m.	9.2	Strategic Mandate Agreement 2025-2030 (SMA4) Engagement Process – J. Choi and. D. McKee Demczyk	145 to 148
7:17 p.m. to 7:27 p.m.	9.3	Annual Academic Quality Assurance Activities – J. Choi	149 to 153

Durham College of Applied Arts And Technology
Public Meeting of the Board of Governors

AGENDA

Timing	Item		Page No.
7:27 p.m. to 7:32 p.m.	**10.**	**Information Items**	
	10.1	DC-Ontario Tech University Academic Pathways Report for 2024-2025	154 to 156
	10.2	Bill S-211: Forced Labour and Child Labour in Supply Chains Act Annual Compliance Report (April 1, 2024 to March 31, 2025)	157 to 166
.7:32 p.m. to 7:37 p.m.	**11.**	**Upcoming Events**	
		• Lean Into Green: DC Update and Employee Celebration – May 21, 2025 at 10:00 a.m. (Oshawa Campus) • Spring Convocation Ceremonies – June 16 to 19, 2025 – Tribute Communities Centre	
7:37 p.m. to 7:39 p.m.	**12.**	**Move to In-Camera Session**	
9:00 p.m. (approx.)	**13.**	**Adjournment**	

Consent Agenda

The following items will be approved with one motion unless an item is pulled for discussion.

**Durham College of Applied Arts And Technology
Board of Governors Regular Meeting
Public Session Minutes**

Date: Wednesday, April 9, 2025

Time: 6:00 p.m.

Location: Oshawa Campus, Durham College Boardroom, A144

Members Present:

Lisa Allen
Brandon Bird
Melissa Bosomworth
Jim Brown (attended the meeting virtually)
Alison Burgess
Kalyan Chakravarthy
Jeff Dornan
Kelly Doyle (entered the meeting at 6:56 p.m.)
John Ecker
Ian Murray
Elaine Popp
Peter Pryce
Kwende Thomas
Dwight Townsend
Nathan Wilson

Members Absent:

Riya Parikh
Jerry Ouellette

Staff Present:

Jean Choi, VP, Academic and Students
Rick Hutchinson, VP, Strategic Infrastructure and Campus Safety
Barbara MacCheyne, VP, Corporate Services and Chief Financial Officer
Thom MacDonald, AVP, Enrolment and International Education
Melissa Pringle, Manager, Board Governance and Privacy
Bonnie St. George, VP, People, Equity and External Relations

Agenda Page 1

1.   **Call to Order**

The Chair declared the meeting was properly constituted and with quorum present, the meeting was called to order at 6:00 p.m.

The Chair welcomed guests in attendance: Tony Doyle, Associate Vice President, Academic and Faculty of Liberal Studies, Cristina Italia, Executive Dean, Faculty of Business and Information Technology and Carol Beam, Associate Vice President, Communications and Marketing.

2.   **Land Acknowledgement**

Governor Pryce offered the land acknowledgement.

3.   **Conflict of Interest Declarations**

The Chair asked if there were any conflicts of interest to declare.

Governor Bosomworth declared a conflict of interest on Item 8.5, Post-Election Report: Student Governor and Support Staff Governor as it relates to her re-election for a second term and she did not take part in discussion or voting on the matter.

4.   **Presentations**

There were no presentations.

5.   **Consent Agenda**

Moved by Governor Wilson
Seconded by Governor Pryce
"That all items listed under the heading of consent agenda be adopted as recommended." CARRIED

5.1   Approval of Public Session Agenda – April 9, 2025

That the public agenda for the April 9, 2025, Board of Governors meeting be approved as presented.

5.2   Approval of Public Minutes from the Board of Governors Meeting of February 12, 2025

That the public minutes from the February 12, 2025 Board of Governors meeting be approved as presented.

Agenda Page 2

5.3   Approval of Public Minutes from the Board of Governors Meeting of March 26, 2025

That the public minutes from the March 26, 2025 Board of Governors meeting be approved as presented.

5.4   Report of the Governance Review Committee – March 10, 2025

That the March 10, 2025 report of the Governance Review Committee be received for information and the following resolutions be adopted:

1. That based on GOV-2025-08, the proposed updates to By-law No. 2 be approved as presented;

2. That based on GOV-2025-09, the proposed updates to Board Policy: Whistleblowing be approved as amended;

3. That based on GOV-2025-10, the proposed updates to Board Policy: Committee Terms of Reference be approved as presented;

4. That based on GOV-2025-11, the proposed updates to Board Policy: Roles and Duties of Officers be approved as presented.

6.   Report of the Board Chair

The Chair reported on the following items:

- That Governor Bird recently completed his advanced good governance certificate through the College Centre of Board Excellence.
- The Board was encouraged to complete the 2024-2025 Board Effectiveness and Committee Preference survey before the deadline.
- On efforts to connect with Laura Elliott, Chair, Ontario Tech University Board of Governors.

7.   Co-Populous Governors' Report

There was no co-populous governors report.

8.   Decision Items

8.1   2025-2030 Strategic Plan

The Board received a report from President Popp, the Associate Vice President, Academic and Faculty of Liberal Studies, and the Associate Vice President, Communications and Marketing presenting the 2025-2030 strategic plan for approval. As part of the presentation, the Board received an overview of the

Agenda Page 3

project's governance structure, project timeline, and the engagement efforts that went into developing the plan. Furthermore, the Board received details about the proposed purpose statement, values, goals, and objectives. Also, the Board received details about the next steps including the preparation of a new business plan and launch of the new strategic plan at the all-employee event on May 21, 2025.

The Board questioned the presenters regarding planned communications for external audiences such as the government and any potential risks regarding the implementation of the plan.

Moved by Governor Ecker
Seconded by Governor Thomas
"That based on Report BOG-2025-40, the 2025-2030 Strategic Plan be approved." CARRIED

8.2   Public Report of the Audit and Finance Committee - March 10, 2025

The Board received a report from the Vice President, Corporate Services and Chief Financial Officer presenting a balanced 2025-2026 operating budget and capital budget for approval.

Highlights of the budget include:

- A projected enrolment of 12,435 students in fall 2025;
- Anticipated revenues of $237M;
- The launch of four new programs;
- A $145K one-time investment in strategic initiatives;
- A $1.3M decrease in long-term debt; and,
- A $8.1M capital investment.

Additionally, the Vice President, Corporate Services and Chief Financial Officer reported on the announcement of top-up funding for fiscal 2025-2026 and STEM funding. Early budget projections for fiscal 2026-2027 were also shared along with details regarding projected enrolments, the College's short-term investments, cash flow, and potential risks to the budget.

Governor Doyle entered the meeting at 6:56 p.m.

As Chair of the Audit and Finance Committee, Governor Murray offered support for the budget and commended staff for the scrutiny, due diligence, and creative solutions used to get to a balanced budget.

Agenda Page 4

The Board questioned the Vice President, Corporate Services and Chief Financial Officer regarding the College's deferred maintenance backlog, the investment in information technology, the details behind the reported increase in corporate revenues for fiscal 2025-2026, and anticipated funding to implement recommendations from the Efficiency and Accountability Report.

Moved by Governor Chakravarthy
Seconded by Governor Murray
"That based on Report FIN-2025-10:

1. The 2025-2026 balanced operating budget and the 2025-2026 capital budget of $8,144,000, be approved;

2. That this report be released publicly with the operating budget to be reviewed and approved by the Durham College Board of Governors during its public session on April 9, 2025; and,

3. That the approved 2025-2026 Operating and Capital Budget be submitted to the Ministry of Colleges, Universities, Research Excellence and Security by the deadline." CARRIED

The Board took a 5-minute recess.

8.3   New Program of Instruction: Marketing Management - Artificial Intelligence and Automation

The Board received a report from the Vice President, Academic and Students and the Executive Dean, Faculty of Business and Information Technology presenting a new program of instruction for approval, Marketing Management – Artificial Intelligence and Automation.

Key aspects of the program were highlighted such as the focus on marketing principles with the integration and use of artificial intelligence and automation to advance the graduate's marketability, and the scalability of the program with little to no costs. The program sees a modest net contribution in Year 1 and progressively increases from there. A brief discussion ensued about the curriculum (e.g., use of AI Tutor, experiential learning) and the need to consult with industry experts to ensure the program's continued relevancy as the development of artificial intelligence is outpacing its adoption.

Additionally, the presenters responded to questions submitted in advance and advised that in times of financial crisis, one of the best strategies is to proceed with launching new programs to attract the domestic students needed to remain competitive.

The Board questioned the presenters regarding the reported wage projections for graduates, the level of industry consultation required to remain relevant, and the potential for an artificial intelligence certification.

Moved by Governor Pryce
Seconded by Governor Bosomworth
"That in accordance with Report BOG-2025-37, the Marketing Management – Artificial Intelligence and Automation Ontario College Graduate Certificate program be approved." CARRIED

8.4   Major Program Change – Data Analytics for Business Decision Making

The Board received a report from the Vice President, Academic and Students and the Executive Dean presenting a major program change for approval, Data Analytics for Business Decision Making.

Highlights of the changes include a title change and minor changes to the curriculum to improve marketability across sectors and to align with the CIP code requirements to allow international students to be eligible for a postgraduate work permit. The presenters advised the current Data Analytics for Business Decision Making Program was highly attractive to international students, and the hope is that program changes will attract international students into the program again.

Moved by Governor Wilson
Seconded by Governor Burgess
"That in accordance with Report BOG-2025-24, the major program changes for Data Analytics for Business Decision Making be approved." CARRIED

8.5   Post-Election Report: Student Governor and Support Staff Governor

Governor Bosomworth left the meeting.

The Board received a post-election report from Governor Chakravarthy, Chair of the Nominating Committee regarding the recent Student Governor and Support Staff Governor elections.

The Board questioned Governor Chakravarthy and the Manager, Board Governance and Privacy regarding potential strategies to improve the voter turnout for the Student Governor election, why so many nomination forms were submitted but not completed, and the tactics in place to support and onboard the Student Governor.

Agenda Page 6

Moved by Governor Dornan
Seconded by Governor Bird
"That based on Report BOG-2025-31:

1. That the Board of Governors ratify the results of the Student Governor Election, and Megan Bent be confirmed as the Student Governor for a one-year term effective September 1, 2025; and,

2. That the Board of Governors ratify the results of the Support Staff Governor Election, and Melissa Bosomworth be confirmed as the Support Staff Governor for a three-year term effective September 1, 2025." CARRIED

Governor Bosomworth re-entered the meeting.

9. Discussion Items

9.1 Final Update on the 2024-2025 Business Plan

The Board received a report from the Vice President, People, Equity and External Relations presenting the final update on the 2024-2025 Business Plan.

Governor Allen temporarily left and re-entered the meeting.

Highlights of the update included details about the completion of the actions outlined in the plan. Of the 100 actions, 89 were completed, 1 was delayed, 7 are on hold, and 3 were cancelled. Additionally, details were shared about a new business plan scorecard template to be implemented for 2025-2026, which will be brought to the Board in June.

The Board questioned the Vice President, People, Equity and External Relations regarding how employees will be encouraged to feel connected to the plan. In response to questions, the Vice President, People, Equity and External Relations advised that the human resources department will be hosting a series of sessions about how to write smart goals and to introduce the new template across the College.

10.	**Information Items**

The following items were presented for information only:

10.1	Update on the Durham College Alumni Association

10.2	President's Update – April 2025

The Board questioned the President regarding the purpose and investment required for the trip to Hanover, Germany. In response to questions, the President advised the trip was coordinated by the Region of Durham and the College paid approximately $5K to participate in the booth, which featured our Corporate Training Services team who are trying to attract international investment.

10.3	2023-2024 Audited Financial Statements for the Durham College Student Association

10.4	Provincial Election Review and Federal Election Progress

11.	**Upcoming Events**

The Chair highlighted the following upcoming events:

- Durham College Open House – Oshawa and Whitby Campuses – April 12, 2025 from 10:00 a.m. to 2:00 p.m.

- Board Chair and Vice Chair Elections; Nominations (April 14 to 17); Voting (April 21 and 22)

- Board Learn More Session: External Relations at Durham College – April 17, 2025, at 5:30 p.m. (MS Teams)

- Completion of the Annual President's Evaluation Survey - April 21 to 25, 2025 *Only External Governors will receive the link; all inputs will be brought to the May Executive Committee meeting and the full Board in June.*

- Young Women in Science, Technology and Trades Conference – April 24 (Oshawa) and April 25 (Whitby)

- Board Professional Development Session – Effective Communication in a Multicultural Environment – May 7, 2025 at 4:00 p.m. (before the May 7 Board meeting)

- All Employee Day at Durham College – May 21, 2025 at 9:00 a.m. (Oshawa Campus)

12. **Move to In-Camera Session**

    Durham College By-law No. 1 provides for the Board of Governors to address, in-camera, items of corporate business that the Board deems to be confidential to the College.

    Moved by Governor Dornan
    Seconded by Governor Pryce
    "That the Durham College Board of Governors move in-camera after a 10-minute recess." CARRIED

    The Board recessed at 8:08 p.m. and reconvened in-camera at 8:16 p.m.

    During the in-camera session, the Board received reports from its Standing Committees, reviewed its financial health metrics, and received an update on federal government policy impacts.

13. **Adjournment**

    With no further business, the meeting ended at 9:47 p.m.

Agenda Page 9

Decision Items

The following items require a decision from the Board and will be presented by staff.

![Durham College – Success Matters logo]

Public Report

Report Number: BOG-2025-43

To: Board of Governors

From: Dr. Jean Choi, Vice President, Academic and Students

Date of Report: April 23, 2025

Date of Meeting: May 7, 2025

Subject: New Program of Instruction: Project Management – Information Technology

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1.   Purpose

To seek approval from the Board of Governors for the following post-secondary program of instruction for Fall 2026 intake:

Project Management – Information Technology
- Credential: Ontario College Graduate Certificate (OCGC)
- Duration: Two semesters
- Faculty: Business and Information Technology

2.   Recommendation

It is recommended to the Durham College Board of Governors:

That in accordance with Report BOG-2025-43 the proposed Project Management – Information Technology Ontario College Graduate Certificate program be approved.

3.   Background

Durham College's (DC) proposed Project Management – Information Technology OCGC immerses students in the latest technological advancements in Information Technology (IT), equipping them with skills to excel in fields such as Agile, Artificial Intelligence (AI), Cybersecurity, Privacy and DevOps. Students explore how these methodologies are used to drive success in IT projects and when they are applied to be work ready upon graduation.

Through hands-on exposure to IT projects, programs, and policies, students enhance or develop their project management expertise. Covering emerging

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technologies such as machine learning, data analytics, and cloud computing, the program prepares students to tackle complex projects in today's tech landscape. Students gain critical insights into cybersecurity, learning how to protect IT infrastructures and ensure compliance with international standards. They develop the knowledge and skills required to identify and mitigate compliance risks, design privacy-safe workflows, and implement secure systems that safeguard user data and uphold business integrity. With these advanced capabilities and a comprehensive understanding of ethics and compliance, graduates are ready to lead projects that balance innovation with security and regulatory requirements.

Students in the Project Management – Information Technology OCGC at DC will receive student membership with the Project Management Institute (PMI®) and the PMI® Durham Highlands Chapter (PMI-DHC). This one-year renewable membership supports students in building valuable networking connections and exploring career options post-graduation.

Additionally, the curriculum prepares students for prestigious certifications such as the Certified Associate in Project Management (CAPM®), Project Management Professional (PMP®), and PMI® Agile Certified Practitioner (PMI-ACP®). Our curriculum provides providing the necessary theory and professional development units to qualify for these prestigious certifications such as the Certified Associate in Project Management (CAPM®), Project Management Professional (PMP®), and PMI® Agile Certified Practitioner (PMI-ACP®) exams, ensuring students are well- equipped to achieve these sought-after credentials.

As per the Ministry of Training, Colleges and Universities' Minister's Binding Policy Directive 3.0, Programs, Framework for Programs of Instruction, the Board of Governors is responsible for approving programs of instruction the college will offer.

It is the role of the Durham College Board of Governors to ensure that programs of instruction are developed and implemented in conformity with the Credentials Framework and are consistent with provincial program standards where they exist. It is also the responsibility of the Board to ensure that all new and modified post-secondary programs of instruction lead to one of the following credentials: Durham College Certificate, Ontario College Certificate, Ontario College Diploma, Ontario College Advanced Diploma, Ontario College Graduate Certificate or Baccalaureate Degree.

We confirm that Durham College is in compliance with all Minister's Binding Policy Directives as noted above, for this new program of instruction.

4. Discussion/Options

Based on the results of the environmental scan, it is expected that the proposed Project Management – Information Technology OCGC will be a beneficial addition to DC's program offerings due to a number of reasons.

- Only four Ontario Colleges of Applied Arts and Technology (CAATs) offer programs focusing on applying project management principles to IT specifically, creating an opportunity for the proposed program to attract students seeking specialized skills in the area.
- The project management industry is growing globally, as is the IT services market.
- The program's focus on core project management skills (leadership, teamwork) are transferable across industries, strengthening the value proposition for students by providing flexibility in career options.
- Alignment with a Post Graduate Work Permit (PGWP) - eligible CIP code increases the opportunity to attract international students, broadening its potential enrolment base.
- The total number of current and projected jobs across all three occupations in Durham (12 per cent) exceeds the anticipated growth for the province (eight per cent) and other relevant census divisions.

5. Financial/Human Resource Implications

The proposed OCGC will submit a Request for Approval for Funding to the Ministry of Colleges, Universities, Research Excellence and Security (MCURES) for a base tuition of $3635.00.

The proposed new program is projected to breakeven and exceed the projected contribution margin in Year One.

6. Implications for the Joint Campus Master Plan

There are no implications for the joint campus master plan.

7. Implications for Ontario Tech University

There are no anticipated implications for Ontario Tech University.

8. Relationship to the Strategic Plan/Business Plan

The proposed program aligns with of the Academic plan, and the Our Students pillar of the Strategic, and Business plans.

The proposed Project Management – Information Technology OCGC was carefully designed to align with the strategic objectives outlined in the Academic, Strategic, and Business plans, ensuring it not only meets but advances the college's mission and goals.

8.1 Academic Plan

Goal 1: Ensure Exceptional Quality in our Academic Programs

Through this new program, students will gain the skills and knowledge required to navigate the complexities of modern project management. They will be equipped to take on leadership roles, drive innovation, and contribute meaningfully to their communities. The curriculum has been developed in consultation with industry experts to maintain the highest standards and professional relevance and aligning our curriculum with current industry trends and economic forecasts, ensures that our graduates are prepared to meet the demands of the future workforce and make a positive impact in their chosen fields.

Goal 2: Enhance Exemplary Teaching and Learning Practices

By incorporating interactive learning experiences, real-world case studies, and advanced technological tools, the proposed program exemplifies innovative teaching practices, enhancing student engagement and learning outcomes.

8.2 Strategic Plan & Business Plan

Pillar: Our Students
Goal: To educate and inspire students to realize success in their careers and communities.

In response to recent changes in the International Student Program, a core segment of our student population is no longer admissible in a generic Project Management (PM) program as part of their pathway to establishing themselves as citizens. To address this, we have designed a new, targeted program that meets the updated eligibility requirements, ensuring that all students can pursue their career goals. At a time of extraordinary change driven by new technologies, executive leaders from business, government, and nonprofit organizations recognize that success depends on big, bold ideas.

Through this new program, students gain the skills and knowledge required to navigate the complexities of modern project management. They are equipped to take on leadership roles, drive innovation, and contribute meaningfully to their communities. By aligning our curriculum with current industry trends and

economic forecasts, we ensure that graduates of the proposed program are prepared to meet the demands of the future workforce and make a positive impact in their chosen fields.

9. Fit with Existing Ontario College Programs

Sixteen CAATs offer a Project Management-related program under the MTCU code 70207. Project Management programs emphasize the systematic planning, execution, and monitoring of projects to achieve specific goals within defined constraints like time, budget, and resources. They focus on developing skills in leadership, communication, risk management, budgeting, and problem-solving, ensuring projects are completed successfully and efficiently. These programs also stress the importance of team collaboration, stakeholder management, and continuous improvement throughout the project lifecycle.

Only four CAATs have Project Management programs with a focus on Information Technology. The proposed OCGC offers a specialized curriculum that delves into unique challenges and methodologies specific to IT projects and includes courses on software development, lifecycle management, IT infrastructure planning, cybersecurity project management, and agile methodologies tailored for IT environments.

New Program Summary

General Program Information

Proposed Program Title	Project Management – Information Technology
Proposed Credential	Ontario College Graduate Certificate (OCGC)
Academic Dean	Cristina Italia
Date of Review by PPRC	April 9, 2025
MTCU Code	70207 (Program Standard)
Weight and Funding Unit (as per APS table)	Weight = 1.1 Funding Unit = 1.0
Proposed Tuition	$3,635.20
Classification of Instructional Program (CIP) Code(s)	11.1005 (PGWP eligible)
NOC Codes	20012, 21221,13100
Proposed Implementation (Year)/Scheduled Intakes (F/W/S):	2026, Fall
Year 1 enrolment	15
Number of sections, Y1	One
International students, seat allocation	Ten
Number of Semesters	Two
Total hours	616
New or replacement program	New
Number of new FT/PT faculty	Two PT each year
Program delivery methods	Classroom, computer lab and online
Bring Your Own Device (BYOD)	Yes
New or renovated space requirements	n/a
Total capital costs	$0
Additional software costs (for college or for student)	Approximately $100 per student

1. Approval Stages

The following approval stages have been assessed for this program:
☒ Labour Market Analysis
☒ Student Demand
☒ Budget reviewed and approved by the Chief Financial Officer and the Vice President Academic and Students
☒ Presented to the Program Proposal Review Committee (DATE: April 9, 2025)
☒ Reviewed by the Director, Academic Quality (April 24, 2025)
☒ Reviewed by the Dean, Teaching, Learning and Academic Quality (DATE: April 23, 2025)
☒ New Program Proposal Summary (budget) reviewed by the Chief Financial Officer (DATE: April 24, 2025)
☒ Approved by Vice-President, Academic and Students (DATE: April 28, 2025)
☒ Reviewed and approved by President (DATE: April 28, 2025)

2. Program Overview

Durham College (DC) is proposing to offer a Project Management – Information Technology Ontario College Graduate Certificate (OCGC) within the Faculty of Business and Information Technology (BIT).

2.1 Program Description

DC's proposed Project Management – Information Technology OCGC immerses students in the latest technological advancements in Information Technology (IT), equipping them with skills to excel in fields such as Agile, Artificial Intelligence (AI), Cybersecurity, Privacy and DevOps. Students explore how these methodologies are used to drive success in IT projects and when they are applied to be work ready upon graduation.

Through hands-on exposure to IT projects, programs, and policies, students enhance or develop their project management expertise. Covering emerging technologies such as machine learning, data analytics, and cloud computing, the program prepares students to tackle complex projects in today's tech landscape. Students gain critical insights into cybersecurity, learning how to protect IT infrastructures and ensure compliance with international standards. They develop the knowledge and skills required to identify and mitigate compliance risks, design privacy-safe workflows, and implement secure systems that safeguard user data and uphold business integrity. With these advanced capabilities and a comprehensive understanding of ethics and compliance, graduates are ready to lead projects that balance innovation with security and regulatory requirements.

Students in the Project Management – Information Technology OCGC at DC will receive student membership with the Project Management Institute (PMI®) and the PMI® Durham Highlands Chapter (PMI-DHC). This one-year renewable

membership supports students in building valuable networking connections and exploring career options post-graduation.

Additionally, the curriculum prepares students for prestigious certifications such as the Certified Associate in Project Management (CAPM®), Project Management Professional (PMP®), and PMI® Agile Certified Practitioner (PMI-ACP®). Our curriculum provides providing the necessary theory and professional development units to qualify for these prestigious certifications such as the Certified Associate in Project Management (CAPM®), Project Management Professional (PMP®), and PMI® Agile Certified Practitioner (PMI-ACP®) exams, ensuring students are well- equipped to achieve these sought-after credentials.

2.2   Career Outcomes

Job Titles	Where Graduates Might Work
• IT junior project manager • IT project manager (w/ previous experience) • IT project support specialist • IT project / program coordinator • IT project / program assistant or administrator	• **Information Technology (IT):** Companies such as Shopify, OpenText, and CGI often seek IT project managers to oversee software development, infrastructure projects, and IT service management. • **Finance:** Banks and financial institutions such as Royal Bank of Canada (RBC), Toronto-Dominion Bank (TD), and Scotiabank need project managers to handle IT projects related to financial systems, cybersecurity, and digital banking • **Healthcare:** Organizations such as Ontario Health, TELUS Health, and various health tech companies require project managers to implement electronic health records (EHR) systems, telemedicine platforms, and other healthcare IT solutions • **Telecommunications:** Companies such as Bell Canada, Rogers Communications and TELUS need project managers for network upgrades, 5G rollouts and other telecom projects. • **Manufacturing:** Firms such Bombardier, Magna International and Linamar hire project managers to oversee IT projects related to automation, supply chain management and production systems. • **Consulting:** Consulting firms such as Deloitte, Accenture and PwC have dedicated IT project management roles to help clients implement technological solutions.

3

Job Titles	Where Graduates Might Work
	• **Government:** Various government agencies and departments, including the Government of Canada, provincial and municipal governments need IT project manager to manage public sector IT projects, including infrastructure upgrades and digital transformation initiatives.

2.3 Vocational Program Learning Outcomes (MTCU# 72900)

Vocational program learning outcomes (VLOs) for the proposed credential must be consistent with the requirements of the Ontario Credentials Framework and the Credential Validation Service.

The graduate of the program has reliably demonstrated the ability to:
1. Manage project goals, constraints, deliverables, performance criteria, quality control needs, and resource requirements as defined by the project participants.
2. Align management and leadership strategies when working on projects according to internal organizational culture.
3. Facilitate communication, negotiation, and collaboration with all participants to ensure the successful completion of projects.
4. Ensure compliance of ethical and professional standards when managing projects.
5. Integrate inclusive practices to support equity and participation of diverse participants when managing projects.
6. Use technology tools for communication, collaboration, planning, information support and decision-making purposes for planning and managing projects.
7. Analyze financial information to promote operational effectiveness and to support the scope, planning, procurement, risk and cost management of projects.
8. Develop a comprehensive project plan to meet participant requirements.
9. Evaluate and select new technologies to maintain a competitive edge in the IT sector.
10. Manage projects in compliance with ethical standards, statutory and regulatory requirements.
11. Evaluate project-specific data to inform interested parties and drive effective decision-making in IT initiatives.

2.4 Admission Requirements

o Ontario College Diploma (OCD), Ontario College Advanced Diploma (OCAD), or Degree in an IT-specific discipline.
  OR
  Applicants with relevant post-secondary and/or a minimum of three years related work experience may also be considered for admission.

4

o Proof of English language proficiency required.

2.5   Differentiation (Within DC)

The proposed Project Management - Information Technology (IT) OCGC offers a specialized curriculum that delves into unique challenges and methodologies specific to IT projects. Unlike more generalized Project Management programs, which cover broad project management principles and tools, this IT-focused program includes courses on software development, lifecycle management, IT infrastructure planning, cybersecurity project management, and agile methodologies tailored for IT environments.

The proposed program integrates technical skills relevant to IT, such as understanding software development, network management, and cybersecurity. This integration prepares students to manage projects requiring a high level of technical knowledge and coordination with IT professionals. Additionally, students earn to use industry-specific project management tools and software commonly used in IT projects, such as JIRA, Confluence, and various DevOps tools. This hands-on experience is crucial for managing complex IT projects effectively.

Experiential learning is a key component of the program, emphasizing real-world projects, internships, and collaborations with industry partners tailored to IT projects. These experiences provide students with practical insights and skills directly applicable to the IT sector.

Due to the scope of the proposed program, there are several DC programs that may be considered affinity programs. The following tables present the Graduate Count, Employment Rate and Employment Rate in a Related Field for high affinity programs currently offered at Durham College.

Ministry Title: Computer Programming (MTCU 50503)

Related Programs at Durham – Computer Programming							
Program		Key Performance Indicator	Reporting Year				
Banner Code	MTCU Code		2018-19	2019-20	2020-21	2021-22	2022-23
CPPG	50503	Graduate Count	32	31	54	54	46
		Employment Rate	85.7% (7)	60.0% (5)	60% (10)	0.0% (1)	76.9% (13)
		Employment Rate in a Related Field	57.1% (7)	60.0% (5)	10.0% (10)	0.0% (1)	38.5% (13)

Ministry Title: Computer Systems Technology (MTCU 60505)

Related Programs at Durham – Computer Systems Technology							
Program		**Key Performance Indicator**	**Reporting Year**				
Banner Code	**MTCU Code**		**2018-19**	**2019-20**	**2020-21**	**2021-22**	**2022-23**
CSTY	60505	Graduate Count	26	55	50	43	33
		Employment Rate	90.0% (10)	54.5% (11)	80.0% (5)	80.0% (5)	100.0% (2)
		Employment Rate in a Related Field	60.0% (10)	18.2% (11)	60.0% (5)	60.0% (5)	100.0% (2)

Ministry Title: Business Administration - Supply Chain and Operations Management (MTCU 68900)

Related Programs at Durham – Business Administration - Supply Chain and Operations Management							
Program		**Key Performance Indicator**	**Reporting Year**				
Banner Code	**MTCU Code**		**2018-19**	**2019-20**	**2020-21**	**2021-22**	**2022-23**
BSOM	68900	Graduate Count	14	14	18	20	20
		Employment Rate	100.0% (5)	85.7% (7)	50.0% (2)	100.0% (2)	83.3% (6)
		Employment Rate in a Related Field	80.0% (5)	71.4% (7)	0.0% (2)	100.0% (2)	66.7% (6)

Ministry Title: Cybersecurity (MTCU 73002)

Related Programs at Durham – Cybersecurity							
Program		**Key Performance Indicator**	**Reporting Year**				
Banner Code	**MTCU Code**		**2018-19**	**2019-20**	**2020-21**	**2021-22**	**2022-23**
CYSC	73002	Graduate Count	42	69	60	38	72
		Employment Rate	60.0% (5)	0.0% (4)	N/A	100.0% (1)	100.0% (6)
		Employment Rate in a Related Field	20.0% (5)	0.0% (4)	N/A	100.0% (1)	50.0% (6)

6

Ministry Title: Data Analytics (MTCU 70717)

Related Programs at Durham – Data Analytics							
Program		**Key Performance Indicator**	**Reporting Year**				
Banner Code	**MTCU Code**		**2018-19**	**2019-20**	**2020-21**	**2021-22**	**2022-23**
DATA	70717	Graduate Count	N/A	45	58	71	221
		Employment Rate	N/A	83.3% (6)	50.0% (4)	83.3% (6)	83.3% (12)
		Employment Rate in a Related Field	N/A	66.7% (6)	0.0% (4)	33.3% (6)	33.3% (12)

The proposed Project Management – Information Technology OCGC complements other programs within the faculty, including programs in project management, technology and business. The focus on cybersecurity, data privacy, compliance and ethics, and emerging technologies augments existing solutions to meet the rising need for IT project managers who are knowledgeable in these areas.

7

3. Program of Study

3.1 Program Map

Semester 1	Semester 2
14 weeks	14 weeks
Project Management Fundamentals 3 hours per week Computer Lab (♥)	IT Project Risk Management 3 hours per week Computer Lab (♪)
Technologies, Tools, and Cybersecurity for IT Projects 4 hours per week Computer Lab (♪)	Procurement, Compliance, and Contract Management 3 hours per week Computer Lab (●)
Leadership and Ethics in Project Management 3 hours per week Online (synchronous) (■)	Privacy, Data Protection, and IT Compliance 3 hours per week Computer Lab (●)
Scope, Schedule and Cost Management 4 hours per week Computer Lab (♪)	Quality Management, Testing, and Compliance 3 hours per week Computer Lab (●)
Requirements Elicitation in Secure IT Projects 3 hours per week Online (synchronous) (♪)	Emerging Trends and Technologies in IT Projects 3 hours per week Computer Lab (♥)
Communications and Stakeholder Engagement 3 hours per week Online (synchronous) (■)	Applied IT Project Management 3 hours per week Online (synchronous) (♪)
Agile Project Management 3 hours per week Computer Lab (♪)	Interdisciplinary Capstone in Project Management 3 hours per week Online (synchronous and asynchronous) (♦)
322 hours	294 hours

Themes:

⬜ Leadership and Communication (■)

🟩 Methodologies (♪)

🟨 Compliance (●)

🟧 Core Project Management (♥)

🟪 Experiential Learning (♦)

8

3.2 Work Integrated and Experiential Learning

Students engage in a 42-hour interdisciplinary capstone course in the second semester of the program, working collaboratively to address complex real-world issues. Through the application of project management principles, the capstone aims to provide a comprehensive learning experience, mimicking industry expectations.

3.3 Course Descriptions

Semester 1

Course Title: Project Management Fundamentals
Course description: Dive into the foundational aspects of project management while examining principles, domains and processes, and applying essential knowledge, skills, tools and techniques to real-world IT projects. Explore governance frameworks, project lifecycles and organizational structures that lead to enhanced project oversight, adaptability and resources management.
Instructional Setting: Computer Lab 3 hrs/wk
Total Hours (Semester): 42

Course Title: Technologies, Tools, and Cybersecurity
Course description: Harness industry-standard software for project scheduling, budgeting, reporting, and cybersecurity. You will employ digital transformation tools to enhance project communication through word processing, spreadsheets, and presentations. Gain hands-on experience with essential applications to streamline project management and collaboration.
Instructional Setting: Computer Lab 4 hrs/wk
Total Hours (Semester): 56

Course Title: Leadership and Ethics in Project Management
Course description: Get equipped with the skills and knowledge to navigate the complex ethical challenges in today's digital world. Learn to lead with integrity and foster a culture of ethical decision-making within your organization. Explore contemporary theories and practical approaches to ethical leadership and understand the profound impact of technology on ethical practices. Whether you're a project professional aiming to enhance your leadership capabilities or a newcomer eager to make a difference, you will be empowered to lead with confidence and ethical clarity.
Instructional Setting: Online (synchronous) 3 hrs/wk
Total Hours (Semester): 42

Course Title: Scope, Schedule and Cost Management
Course description: Effectively establish and manage realistic schedules, and detailed budgets for a range of projects based on a solid scope understanding. Learn to develop integrated budgets and schedules while monitoring project performance and scope through hands-on exercises. Gain proficiency in using industry-standard tools and techniques, such as earned value management, to

ensure your projects are delivered on time and within budget and without scope creep.
Instructional Setting: Computer Lab 4 hrs/wk
Total Hours (Semester): 56

Course Title: Requirements Elicitation in Secure IT Projects
Course description: Tackle the unique challenges of requirements gathering, monitoring, and control and navigate complex stakeholder interactions, eliciting precise requirements with confidence and precision. Engage with industry-standard practices for documenting, analyzing, and controlling requirements. Privacy also plays a critical role in the requirements elaboration process, therefore incorporating privacy considerations to protect sensitive information and comply with data protection regulations is a key skill you will incorporate into your work.
Instructional Setting: Online (synchronous) 3 hrs/wk
Total Hours (Semester): 42

Course Title: Communication and Stakeholder Engagement
Course description: Apply skills to communicate effectively within the fast-paced world of project management. Learn to master both verbal and nonverbal communication techniques, conduct crucial conversations with interested partners, and deliver impactful presentations. Establish a strong working relationship with key interested partners and learn how to manage their expectations. Gain insights into fostering an engaging and innovative organizational culture, navigating conflicts, and building effective teams.
Instructional Setting: Online (synchronous) 3 hrs/wk
Total Hours (Semester): 42

Course Title: Agile Project Management
Course description: Agile focuses on iterative development, allowing IT teams to respond quickly to changes and continuously deliver value. Equip yourself with the skills to implement Agile approaches through the implementation of Agile frameworks, tools, and techniques to enhance team collaboration and project efficiency. You will apply various frameworks into your project management practice to ensure project success.
Instructional Setting: Computer Lab 3 hrs/wk
Total Hours (Semester): 42

Semester 2

Course Title: IT Project Risk Management
Course description: Risk mitigation in IT project management ensures that potential threats to project objectives—such as delays, security breaches, cost overruns, or technical failures—are proactively addressed. Develop robust risk management plans and utilize project management tools and techniques to identify, assess, prioritize, and respond to risks that could impact a project's success.
Instructional Setting: Computer Lab 3 hrs/wk
Total Hours (Semester): 42

Course Title: Procurement, Compliance, and Contract Management
Course description: Procurement in IT project management refers to the process of acquiring goods, services, or external resources necessary to complete a project successfully. This includes hardware, software, cloud services, third-party vendors, consultants, and outsourcing services. Robust procurement principles and practices are an important element in driving IT project success. This includes vendor selection, contract negotiation, and risk management. Management of contracts and vendor relationships is applicable over the entire procurement lifecycle, right up to contract closure. You will focus on ensuring compliance and achieving project objectives as key elements in the role of project manager.
Instructional Setting: Computer Lab 3 hrs/wk
Total Hours (Semester): 42

Course Title: Privacy, Data Protection, and IT Compliance
Course description: Develop the skills necessary to safeguard sensitive information and maintain the integrity of IT projects in an increasingly complex digital landscape. Identify and respond to security risks, implement robust privacy policies, and ensure compliance with relevant regulations through practical exercises and case studies that mirror real-world challenges in IT. Topics include data protection, threat assessment, incident response, and secure software development practices.
Instructional Setting: Computer Lab 3 hrs/wk
Total Hours (Semester): 42
Pre-requisite: Leadership and Ethics in Project Management

Course Title: Quality Management, Testing, and Compliance
Course description: In IT projects, quality management, testing, and compliance ensure that the final product meets user expectations, functions correctly, and adheres to industry standards. These elements help prevent failures, reduce risks, and enhance customer satisfaction. You will ensure software quality, including test planning, execution, and defect management, by applying industry-standard methodologies and best practices. Explore various testing techniques, such as unit testing, integration testing, system testing, and user acceptance testing, with a focus on automation and continuous integration. Through hands-on exercises and real-world scenarios, you will implement effective quality assurance processes, ensuring that IT projects meet or exceed stakeholder expectations and deliver compliant, reliable, high-quality solutions.
Instructional Setting: Computer Lab 3 hrs/wk
Total Hours (Semester): 42

Course Title: Emerging Trends and Technologies in IT Projects
Course description: Successful project managers implement innovative solutions and drive success in projects, positioning themselves as forward-thinking leaders in the ever-evolving IT landscape. Delve into cutting-edge technologies, methodologies, and best practices that are shaping the future of IT

11

project management within the evolving fields of artificial intelligence, sustainability, blockchain, cybersecurity, and agile frameworks.
Instructional Setting: Computer Lab 3 hrs/wk
Total Hours (Semester): 42

Course Title: Applied IT Project Management
Course description: Real-world projects and interactive simulations offer a deep dive into the use of methodologies and tools essential for managing projects effectively. The emphasis is on the practical application of cutting-edge techniques and best practices in the IT landscape. You will benefit from the knowledge and experience of industry leaders and seasoned project managers as they cover everything from project justification, initiation through to closure, risk management, and stakeholder communication. Apply your skills to lead projects to completion on time, within budget, and to the highest standards.
Instructional Setting: Online (synchronous) 3 hrs/wk
Total Hours (Semester): 42
Pre-requisites: Semester one courses

Course Title: Interdisciplinary Capstone in Project Management
Course description: Integrate and apply the comprehensive knowledge and skills you've acquired by engaging in hands-on, project-based experiences that simulate real-world IT environments. Guided by industry experts, you will tackle complex challenges and develop innovative solutions. The culmination of this experience is a robust portfolio showcasing your IT project management capabilities.
Instructional Setting: Online (synchronous and asynchronous) 3 hrs/wk
Total Hours (Semester): 42
Pre-requisites: Semester one courses

4.   **Strategic Alignment**

The proposed program aligns with of the Academic plan, and the Our Students pillar of the Strategic, and Business plans.

The proposed Project Management – Information Technology OGCC is carefully designed to align with the strategic objectives outlined in the Academic, Strategic, and Business plans, ensuring it not only meets but advances the college's mission and goals.

4.1 Academic Plan

Goal 1: Ensure Exceptional Quality in our Academic Programs

The curriculum has been strategically developed in consultation with industry experts to maintain the highest standards and professional relevance to ensure students gain the skills and knowledge required to navigate the complexities of modern project management. They are equipped to take on leadership roles, drive innovation, and contribute meaningfully to their communities. By aligning the curriculum with current

12

Agenda Page 26

industry trends and economic forecasts, graduates are prepared to meet the demands of the future workforce and make a positive impact in their chosen fields.

Goal 2: Enhance Exemplary Teaching and Learning Practices

By incorporating interactive learning experiences, real-world case studies, and advanced technological tools, the proposed program exemplifies innovative teaching practices, enhancing student engagement and learning outcomes.

Goal 3: Establish and Augment Internationalization and Global Engagement Initiatives

In response to recent changes in the International Student Program, a core segment of our student population is no longer admissible in a generic Project Management (PM) program as part of their pathway to establishing themselves as citizens. The proposed program has been designed to meet the updated eligibility requirements, ensuring that all students can pursue their career goals.

4.2 Strategic and Business plans

Pillar: Our Students
Goal: To educate and inspire students to realize success in their careers and communities.

At a time of extraordinary change driven by new technologies, executive leaders from business, government, and nonprofit organizations recognize that success depends on big, bold ideas. The need for individuals with the skills and mindset to deliver on these ideas through ambitious projects, while properly considering the associated risks is growing. The proposed program will continue DC legacy of exceptional Project Management programming by providing students with the education and inspiration they need to realize success in their careers and communities.

4.3 Fit with Existing Ontario College Programs

Sixteen Ontario Colleges of Applied Arts and Technology (CAATs) offer a Project Management-related program under the MTCU code 70207. Project Management programs emphasize the systematic planning, execution, and monitoring of projects to achieve specific goals within defined constraints like time, budget, and resources. They focus on developing skills in leadership, communication, risk management, budgeting, and problem-solving, ensuring projects are completed successfully and efficiently. These programs also stress the importance of team collaboration, stakeholder management, and continuous improvement throughout the project lifecycle.

13

Only four CAATs have Project Management programs with a focus on Information Technology. The proposed OCGC offers a specialized curriculum that delves into unique challenges and methodologies specific to IT projects and includes courses on software development, lifecycle management, IT infrastructure planning, cybersecurity project management, and agile methodologies tailored for IT environments.

5. Labour Demand and Graduate Employment Possibilities

Based on the results of the environmental scan, it is expected that the proposed Project Management – Information Technology OCGC will be a beneficial addition to DC's program offerings for several reasons.

- Only four colleges offer programs focusing on applying project management principles to IT specifically, creating an opportunity for the proposed program to attract students seeking specialized skills in the area.
- The project management industry is growing globally, as is the IT services market.
- The program's focus on core project management skills (leadership, teamwork) are transferable across industries, strengthening the value proposition for students by providing flexibility in career options.
- Alignment with a PGWP-eligible CIP code increases the opportunity to attract international students, broadening its potential enrolment base.
- The total number of current and projected jobs across all three occupations in Durham (12%) exceeds the anticipated growth for the province (eight per cent) and other relevant census divisions, particularly for NOC codes 20012 and 21221, which are more directly aligned with the program.

5.1   Labour Market Analysis

The Standard for Project Management defines a project as, "a temporary endeavor undertaken to create a unique product, service, or result". In that context, Project Management (PM) refers to, "the application of knowledge, skills, tools, and techniques to project activities to meet project requirements"[1], and involves "guiding the project work to deliver the intended outcomes" [ibid]. This discipline focuses on planning, organizing, and overseeing projects from start to finish. It is about ensuring that projects are completed on time, within scope, and on budget (i.e., the Triple Constraint) while meeting quality standards. *The Standard for Project Management* also defines a project manager as, "the person assigned by the performing organization to lead the project team that is responsible for achieving the project objectives" [ibid]. Project managers are needed across various sectors, including natural resources, manufacturing, construction, information technology, healthcare, and finance. Roles can range

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[1] Statista Market Insights. (2024, April). *IT services: Market data & analysis - Worldwide*. Statista. https://www.statista.com/outlook/tmo/it-services/worldwide

from project coordinator, project manager, program manager, to portfolio manager, depending on experience and career path.

PM principles are internationally recognized, providing structured approaches for quality, guidance, and risk[2]. Various methodologies and frameworks exist to organize and execute project activities effectively. These include *Agile* - a flexible, iterative approach, often used for software or tech projects, where requirements might evolve, *Scrum* - a subset of *Agile*, focused on short, iterative cycles called sprints, *Lean* - focuses on maximizing value by minimizing waste, often used in manufacturing and tech industries, and *PRINCE2* - Projects in Controlled Environments; a structured project management method, often used in government and large organizations. Project Managers also leverage other tools and software – such as Microsoft Project, Asana, Trello, Jira, and Monday.com – to track and manage tasks, timelines, and team collaboration.

Project Management Institute (PMI®) research reveals a rising and substantial need for project management skills in general, projecting the creation of 25 million new project management roles until 2030 worldwide[3]. To meet this increasing demand, 2.3 million individuals will need to enter the industry each year. The report identifies three key factors contributing to this gap: the rising number of jobs needing project management skills, increased demand for project professionals in emerging economies, and a high rate of workforce retirements[3]. Although these numbers reflect the overall PM market, they also specifically represent the IT-PM market, discussed below.

Project Management – Information Technology

The Information Technology services market worldwide
The IT services market provides technology-related services to businesses, helping organizations optimize operations and stay competitive. Valued at US$1.51 trillion, this market has experienced rapid growth in recent years, driven by a significant rise in global demand for technology services[4]. The COVID-19 pandemic accelerated the adoption of digital technologies and the need for improved business operations, particularly in industries like healthcare, finance, and government. These factors, along with the increasing need for cloud computing, cybersecurity—which has become more important than ever due to the rise of e-commerce—and artificial intelligence, are driving market growth. However, the IT services market also faces challenges, including a shortage of skilled IT professionals.

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[2] ISO 9000, ISO 21500, and ISO 31000, respectively. ISO is an international body that creates and publishes standards for quality, safety, and efficiency across industries.

[3] Project Management Institute. (2021). *Talent gap: Ten-year employment trends, costs, and global implications*. Project Management Institute. https://www.pmi.org/learning/careers/talent-gap-2021

[4] Statista Market Insights. (2024, April). *IT services: Market data & analysis - Worldwide*. Statista. https://www.statista.com/outlook/tmo/it-services/worldwide

15

This industry is also growing rapidly in Canada. With a projected revenue of US$32.41 billion in 2025, the Canadian IT services market is expected to expand at a compound annual growth rate (CAGR) of 5.53% (2025-2029) and reach US$40.19 billion by 2029[5]. IT outsourcing[6] is the dominant sector, with forecasts estimating it will hit US$12.93 billion in 2025. Additionally, businesses are increasingly turning to cloud computing to improve data storage and security.

Within this context, project management ensures that IT projects are completed on time, within scope, and on budget by applying structured planning, resource allocation, risk management, and communication. It involves defining clear objectives, using methodologies like *Agile* or *Waterfall*, and ensuring collaboration across diverse teams. Project managers monitor progress, handle changes, and oversee quality assurance and testing to meet stakeholder expectations. Specialized tools like Jira and Trello help track tasks and milestones, while effective communication ensures that everyone is aligned. Ultimately, IT project management ensures that complex technology solutions are delivered successfully and efficiently.

The information and publishing industry is projected to see a 15.2% growth in job openings by 2030, making it the fastest-growing industry compared to others like construction and oil/gas[7]. Project management positions in IT-related fields, including software development (14%), computer systems analysis (1%), and computer information systems (4%), are all expected to grow globally by that same period.

IT project managers encounter various challenges when managing projects to ensure their success and meet baseline goals. Consequently, IT projects have historically struggled with high failure rates, leading to significant financial losses[8] [9]. The success or failure of a project depends on its estimated cost and timeline. Common issues include unrealistic deadlines, poor communication, and ineffective risk management[10]. Studies show that at least six key factors tend to affect project success in IT: stakeholder management, baseline definition (e.g., scope, schedule, cost, and quality), communication management, human resources and skills, risk and issue management, and project control

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[5] Statista Market Insights. (2024, April). *IT services: Market data & analysis - Canada*. Statista. https://www.statista.com/outlook/tmo/it-services/canada

[6] IT outsourcing is the practice of hiring external companies or service providers to handle IT functions and services, such as software development, infrastructure management, technical support, or cybersecurity, instead of doing them in-house.

[7] Project Management Institute. (2021). *Talent gap: Ten-year employment trends, costs, and global implications*. Project Management Institute. https://www.pmi.org/learning/careers/talent-gap-2021

[8] Fister, G. S. (2009, November). Rescue plan. *PMI Network® Magazine, 23*(1), 18–19.

[9] Bloch, M., Blumberg, S., & Laartz, J. (2012, October 1). *Delivering large-scale IT projects on time, on budget, and on value*. McKinsey & Company. https://www.mckinsey.com/industries/technology-media-and-telecommunications/our-insights/delivering-large-scale-it-projects-on-time-on-budget-and-on-value

[10] Schmidt, R., Lyytinen, K., Keil, M., & Cule, P. (2001). Identifying software project risks: An international Delphi study. *Journal of Management Information Systems, 17*(4), 5–36.

16

methodology[11]. Due to these factors, IT projects require a strong understanding of management processes to ensure project success. While IT projects follow the standard project lifecycle, their unique characteristics—rapidly evolving technologies, a wide range of stakeholders, multiple dependencies, and unclear initial scopes—demand careful consideration from project managers[12]. Therefore, developing a solid body of knowledge on IT project management is essential to help managers enhance their practices and improve project outcomes.

Artificial Intelligence (AI)

There is a growing trend of incorporating AI technology into various industries[13]. Specifically, AI in project management, enhances efficiency by automating routine tasks, predicting project risks, and optimizing resource allocation. AI can analyze large datasets to provide insights for decision-making, improve scheduling accuracy, and monitor progress in real time. AI-powered tools help identify potential issues early, streamline communication, and assist in planning, ensuring projects stay on track and within budget. Ultimately, AI enables project managers to make data-driven decisions, reduce manual work, and improve overall project outcomes[14].

The McKinsey Global Survey on AI reveals that 78% of organizations are incorporating generative AI into at least one business function, with project management being a significant area of focus[15]. Worldwide, the AI market is expected to reach a size of US$243.72 billion in 2025, with an estimated CAGR (2025-2030) of 27.67%, leading to a projected market volume of US$826.73 billion by 2030[13]. In Canada, this market is projected to reach US$5.46 billion this year, with a CAGR of 27.65%, potentially increasing the market size to US$18.50 billion by 2030[16]. As a result, there is a growing demand for training in this area. Training people to use AI in project management is essential because it empowers them to leverage these tools effectively, ensuring they can maximize efficiency, make informed decisions, and minimize risks. Proper training also helps people adapt to technological advancements and maintain a competitive edge, fostering innovation and better collaboration within teams. The PMI® now

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[11] Oak, V. J., & Laghate, K. (2016). Analysis of project management issues in information technology industry: An overview of literature. *International Journal of System Assurance Engineering and Management, 7*(5), 418–426.

[12] Perera, S., Eadie, R., Kumaraswamy, M., Nanayakkara, S., & Weerasuriya, G. T. (2022). Managing IT projects: The case for consolidating and developing a body of knowledge. In *Managing Information Technology Projects: Building a Body of Knowledge in IT Project Management* (pp. 1-8).

[13] Statista. (2024, March). *Artificial intelligence - worldwide* [Market outlook]. Statista. https://www.statista.com/outlook/tmo/artificial-intelligence/worldwide

[14] Kestenholz, P. (2023, March 30). *How AI is revolutionizing project management: Three use cases*. Forbes Technology Council. https://www.forbes.com/sites/forbestechcouncil/2023/03/30/how-ai-is-revolutionizing-project-management-three-use-cases/

[15] McKinsey & Company. (n.d.). *The state of AI*. QuantumBlack. https://www.mckinsey.com/capabilities/quantumblack/our-insights/the-state-of-ai

[16] Statista. (2024, March). *Artificial intelligence - Canada* [Market Insights]. Statista. https://www.statista.com/outlook/tmo/artificial-intelligence/canada

17

offers training and certifications such as the *Cognitive Project Management for AI* (CPMAI), which focuses on training professionals to successfully manage AI, machine learning, and big data analytics projects. The PMI® also offers shorter, stand-alone courses such as *Practical Application of Generative AI for Project Managers*, which teaches project managers how to integrate AI tools to improve workflows, decision-making, and project outcomes, with a focus on automating tasks like meeting summaries, team assessments, and data analysis[17].

The proposed program

The proposed Project Management – IT OCGC is uniquely designed to apply project management principles specifically to IT projects differentiating itself by offering a unique emphasis on cybersecurity, privacy, compliance, and emerging technologies (such as AI, blockchain, and IoT). The program specializes in modern IT project management skills, focusing on methodologies like *Agile, Scrum,* and *DevOps*. The program also covers key technologies such as AI, machine learning, cloud computing, and cybersecurity, with an emphasis on privacy regulations and compliance. Students gain practical experience through an optional work term, learning to manage IT projects using PMI best practices. Students will benefit from membership in the Project Management Institute for career development and networking opportunities, and develop the knowledge required to prepare for certifications like CAPM®, PMP®, and PMI-ACP®.

Associations and Affiliations

- o International Project Management Association
- o Project Management Association of Canada
- o Project Management Institute

Certifications

- o *Agile/Scrum* Certifications: If focus is on *Agile* methodologies, certifications like ScrumMaster or *Agile* Certified Practitioner can be valuable.
- o Certified Associate in Project Management (CAPM)®: An entry-level certification for those starting out in the field.
- o Cognitive Project Management for AI (CPMAI)®
- o Portfolio Management Professional (PfMP)®
- o Program Management Professional (PgMP)®
- o Project Management Professional (PMP)®: One of the most recognized certifications in the field.

Employment Projections

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[17] Project Management Institute. (2025). Practical application of generative AI for project managers. *Project Management Institute*. https://www.pmi.org/shop/p-/elearning/practical-application-of-generative-ai-for-project-managers/el173

18

The National Occupation Classification (NOC)[18] provides a standardized framework for organizing the labour force into a coherent system. Statistics Canada updated the NOC classifications in 2021 to provide an updated and more specific reflection of the labour market. The use of 5 digits instead of 4 digits for the NOC codes allows for more specificity in the jobs described under that category. However, several sources of labour market information have not yet transformed their database from the 2016 NOC structure to the 2021 NOC structure. Hence the following description identifies the relevant 2021 codes and their 2016 equivalencies below but the discussion in this section primarily relies upon the 2021 framework.

Job titles and descriptions relevant to IT Project Management were collated from a variety of labour market reports. Based on the titles and descriptions, three key five-digit NOC codes were identified: 20012, 21221, and 13100 as relevant to the labour market pertaining to IT Project Management.
These three codes are:
- 20012 (2021) – Computer and information systems managers (e.g., technical delivery manager – IT, technical program manager – IT, information systems manager, management information system manager) is equivalent to 0213 (2016) – Computer and information systems managers.
- 21221 (2021) – Business systems specialists (e.g., IT business analyst, information systems business analyst, business systems analyst, business systems consultant) is equivalent to code 2171 (2016) – Information systems analysts and consultants.
- 13100 (2021) – Administrative officers (e.g., access to information and privacy officer, records analyst – access to information, administrative officer, office manager, and office administrator) is equivalent to 1221 (2016) – Administrative officers.

The following table depicts a selection of the specialized skills pulled from active job postings in occupations related to Project Management:

In Demand Skills		
NOC Code - Occupation	**Specialized Skills**	**Skills for Success**
20012 – Computer and information systems managers 21221 – Business systems specialists 13100 – Administrative officers	• Project Management • Change Management • Project Planning • Agile Methodology	• Communication • Management • Leadership • Planning

Source: Occupational Profiles, Lightcast Analyst 2024.3, accessed March 2025.

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[18] Government of Canada, National Occupational Classification – NOC 2021 Version 1.0, accessed Jan 2025.

Labour Market Outlook

National Outlook

Occupational Classification: National
The following table displays wages, occupation statistics and employment outlooks for relevant occupations in Canada:

Wages, Occupational Statistics and Employment Outlook (National)					
NOC Code - Occupation	Median Wage	Employment in 2023	Percentage of workers aged 50 and over	Median Retirement Age in 2023	Outlook to 2033[19]
20012 – Computer and information systems managers	$63.31	124,200	32%	62.0	Balance
21221 – Business systems specialists	$43.27	34,900	32%	61.0	Balance
13100 – Administrative officers	$28.04	238,500	38%	63.0	Balance

Source: Employment and Social Development Canada https://www.jobbank.gc.ca/trend-analysis/search-occupations, Canadian Occupational Projections System https://occupations.esdc.gc.ca, accessed March 2025.

Provincial Outlook

Occupational Classification: Provincial
The following table displays the provincial job prospects over the next three years for the relevant occupations, as well as median wage:

Wages, Occupational Statistics and Employment Outlook (Provincial)			
NOC Code - Occupation	Median Wage	Current Employment	Prospects over the next 3 years[20]
20012 – Computer and information systems managers	$64.10	47,650	Moderate

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[19] Definitions correspond to 2024-2033 national labour market data taken from the Department of Employment and Social Development Canada (ESDC) and are based on the Canadian Occupational Projections System (COPS).
Strong Risk of Shortage: This occupation is expected to face a strong risk of labour shortage over the period of 2024-2033 at the national level.
Moderate Risk of Shortage: This occupation is expected to face a moderate risk of labour shortage over the period of 2024-2033 at the national level.
Balance: Labour demand and labour supply are expected to be broadly in line for this occupation group over the period of 2024-2033 at the national level.
Moderate Surplus: This occupational group is expected to face moderate labour surplus conditions over the period of 2024-2033 at the national level.
Strong Risk of Surplus: This occupation is expected to face a strong risk of labour surplus over the period of 2024-20233 at the national level.
[20] Table three reflects the previous provincial labour market data projections for the period of 2024 to 2026, updated as of December 11th, 2024. The provincial labour market data rankings are defined by the Department of Employment and Social Development Canada (ESDC):
Very good: the short- and medium-term potential for employment for this occupation group is significantly higher than the regional average, compared to other occupations.
Good: the short- and medium-term potential for employment for this occupation group is higher than the regional average, compared to other occupations.

Wages, Occupational Statistics and Employment Outlook (Provincial)			
NOC Code - Occupation	Median Wage	Current Employment	Prospects over the next 3 years[20]
21221 – Business systems specialists	$43.27	16,500	Moderate
13100 – Administrative officers	$28.21	74,200	Moderate

Source: Employment and Social Development Canada https://www.jobbank.gc.ca/trend-analysis/search-occupations, accessed February 2025.

The following figure displays the provincial job outlook rating (2023-2027) [21] for the relevant occupations, as well as annual median income.

20012 – Computer and information systems managers

Job outlook: Moderate — Median wage / salary: $64.10 — Top location: Toronto (63%)

21221 – Business systems specialists

Job outlook: Moderate — Median wage / salary: $43.27 — Top location: Toronto (68%)

13100 – Administrative officers

Job outlook: Moderate — Median wage / salary: $28.21 — Top location: Toronto (47%)

Source: Ontario Job Profiles https://www.services.labour.gov.on.ca/labourmarket, accessed March 2025.

The median hourly wage rate for two occupations (20012 and 21221) is above the 2024 median hourly wage rate in Ontario ($30.00)[22].

The following table presents summary job profile statistics provided by the Government of Ontario for the relevant occupations:

Moderate: the short- and medium-term potential for employment for this occupation group is comparable to the regional average, compared to other occupations.
Limited: the short- and medium-term potential for employment for this occupation group is below the regional average, compared to other occupations.
Very limited: the short- and medium-term potential for employment for this occupation group is significantly lower than the regional average, compared to other occupations over the next 3 years.
[21] Outlook rankings are defined by the Ontario Ministry of Labour, Immigration, Training and Skills Development:
Very good: This situation is most favourable to job seekers since it indicates moderate recent and future employer demand for workers. Relative to other occupations, these occupations tended to have very high numbers of online job postings relative to the size of the occupation, very low unemployment rates in the recent past, very high projected employment growth rates and very high projected rates of attrition due to retirement.
Good: This situation is more favourable to job seekers since it indicated moderate recent and future employer demand for workers. Relative to other occupations, these occupations tended to have high numbers of online job postings relative to the size of the occupation, low unemployment rates in the recent past, high projected employment growth rates and high projected rates of attrition due to retirement.
Moderate: This situation is somewhat favorable to job seekers since it indicates moderate recent and future employer for workers. Relative to other occupations, these occupations tended to have moderate number of online job postings relative to the size of the occupation, moderate unemployment rates in the recent past, moderate projected employment growth rates and moderate projected rates of attrition due to retirement.
[22] Statistics Canada, Employee wages by industry annual, accessed March 2025.

21

Provincial Summary Job Profile Statistics			
NOC Code - Occupation	Males	Females	Unemployment Rate
20012 – Computer and information systems managers	73%	27%	2.2%
21221 – Business systems specialists	55%	45%	3.7%
13100 – Administrative officers	15%	85%	6.6%

Source: Ontario Job Profiles https://www.services.labour.gov.on.ca/labourmarket, accessed March 2025.

Unemployment rates for all three occupations are lower than the 2024 average provincial unemployment rate (seven per cent)[23].

The following table displays the education level of employees for relevant occupations in Ontario:

Educational Attainment			
Education Level	20012 – Computer and information systems managers	21221 – Business systems specialists	13100 – Administrative officers
No certificate, diploma or degree:	1%	0%	3%
Secondary (high) school diploma or equivalency certificate	9%	7%	24%
Apprenticeship or trades certificate or diploma	1%	0%	2%
College, CEGEP or other non-university certificate or diploma	20%	14%	33%
Bachelor's degree	42%	46%	26%
Degree in medicine, dentistry, veterinary medicine or optometry	0%	0%	0%
Master's degree	21%	24%	7%
Earned doctorate	2%	1%	1%
Other	6%	7%	4%

Source: Ontario Job Profiles https://www.services.labour.gov.on.ca/labourmarket, accessed March 2025.
Percentages may not sum to 100 due to rounding.

The following table presents provincial employment opportunities for each relevant occupation. Within each column, the percentages indicate the distribution of all individuals employed in the corresponding occupation across the select census divisions:

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[23] Statistics Canada, Unemployment rate, participation rate and employment rate by sex, annual, accessed March 2025.

Employment Share by Census Division				
Census Division	All Occupations	20012 – Computer and information systems managers	21221 – Business systems specialists	13100 – Administrative officers
Durham	**5%**	6%	6%	5%
Toronto	**21%**	25%	30%	18%
Peel	**10%**	13%	17%	10%
York	**9%**	12%	12%	10%
Peterborough	**1%**	<1%	<1%	1%
Northumberland	**1%**	<1%	<1%	<1%
Kawartha Lakes	**1%**	<1%	<1%	<1%

Source: Ontario Job Profiles https://www.services.labour.gov.on.ca/labourmarket, accessed March 2025.

The following table presents the combined number of current and projected jobs that are expected to be created in Ontario and select census divisions across all three relevant occupations:

Occupation Summary (Ontario and Select Census Divisions) – 2024 & 2029					
Region	2024 Jobs	2029 Jobs	Change	% Change	Average Hourly Wages (2023)
Ontario	**149,961**	**162,371**	**12,410**	**8%**	**$46.08**
Durham	6,857	7,647	790	12%	$48.51
Toronto	40,365	42,720	2,355	6%	$49.61
Peel	17,410	18,761	1,351	8%	$50.07
York	15,105	16,521	1,416	9%	$50.18
Peterborough	1,035	1,108	73	7%	$36.31
Northumberland	396	420	24	6%	$36.88
Kawartha Lakes	354	374	20	6%	$36.75

Source: Labour Force Survey, Lightcast Analyst 2024.3, accessed March 2025.

Local Outlook

Occupational Classifications: Region of Durham

The following table presents the number of jobs and hourly wages for all relevant occupations within the Durham census division. Job counts are presented for 2024, in addition to a projection of the number of jobs in 2029:

Durham Region Employment Outlook - 2024 & 2029					
NOC Code - Occupation	2024 Jobs	2029 Jobs	Change	% Change	Average Hourly Wages (2023)
20012 – Computer and information systems managers	2,586	3,008	422	16%	$71.67
21221 – Business systems specialists	798	927	129	16%	$46.12

23

Durham Region Employment Outlook - 2024 & 2029					
NOC Code - Occupation	2024 Jobs	2029 Jobs	Change	% Change	Average Hourly Wages (2023)
13100 – Administrative officers	3,473	3,713	240	7%	$32.17
Total	6,857	7,647	790	12%	$48.51

Source: Labour Force Survey, Lightcast Analyst 2024.3, accessed March 2025.

The following table presents information for the self-employment in selected occupations within the Durham census division:

Durham Region Self-Employment Outlook - 2024 & 2029				
NOC Code - Occupation	2024 Jobs	2029 Jobs	Change	% Change
20012 – Computer and information systems managers	45	49	4	9%
21221 – Business systems specialists	170	198	28	16%
13100 – Administrative officers	27	<10	N/A	N/A
Total	241	252	11	5%

Source: Labour Force Survey, Lightcast Analyst 2024.3, accessed March 2025.

The occupations reviewed above are distributed across the economy in a variety of different industries. The figure below illustrates the wide distribution of high affinity occupations in Ontario:

Most Jobs are Found in the Computer systems design and related services Industry Sector

Industry	% of Occupation in Industry (2024)
Computer systems design and related services	12.1%
Universities	4.4%
Other federal services (9112-9119)	4.4%
General medical and surgical hospitals	3.5%
Depository credit intermediation	3.1%
Provincial and territorial public administration	2.8%
Other	69.7%

Source: Labour Force Survey, Lightcast Analyst 2024.3, accessed March 2025.

The figure above illustrates the highest concentration of the occupations related to the proposed Project Management – Information Technology program is in *Computer systems design and related services;* however, a large percentage of occupations (69.7 per cent) are in other industries demonstrating a breadth of employment opportunities.

The following table displays the sectors in which the relevant occupations are employed:

24

DURHAM COLLEGE
SUCCESS MATTERS

20012 – Computer and information systems managers		21221 – Business systems specialists	
40%	Professional, scientific and technical services	**31%**	Professional, scientific and technical services
12%	Finance and insurance	**25%**	Finance and insurance
9%	Information and cultural industries	**10%**	Public administration
9%	Public administration	**7%**	Information and cultural industries
5%	Manufacturing	**4%**	Manufacturing
24%	All other industries	**22%**	All other industries

13100 – Administrative officers	
17%	Health care and social assistance
11%	Educational services
11%	Professional, scientific and technical services
10%	Public administration
9%	Construction
41%	All other industries

Source: Ontario Job Profiles https://www.services.labour.gov.on.ca/labourmarket, accessed February 2025.

Two of the relevant occupations, Computer and information systems managers and Business systems specialists, are more prevalent in the Professional, scientific and technical services sector; however, administrative officers are more prevalent in the healthcare and social assistance sector.

6. **Student Interest**

   6.1 **Applications and Acceptances**

25

The following figure displays system-wide domestic applications, first choice applications and confirmed acceptances for the Fall intake of the Project Management programs in Ontario (MTCU 70207):

Project Management (MTCU 70207):
Total Applications, First Choice Applications and Confirmations; Fall

	2019-20	2020-21	2021-22	2022-23	2023-24
Total Applications	1,563	1,411	1,109	1,114	1,339
First Choice Applications	557	523	400	444	522
Confirmed Acceptances	255	307	253	252	310
Number of programs	15	15	17	17	17
Avg. conf./program	17	20	15	15	18
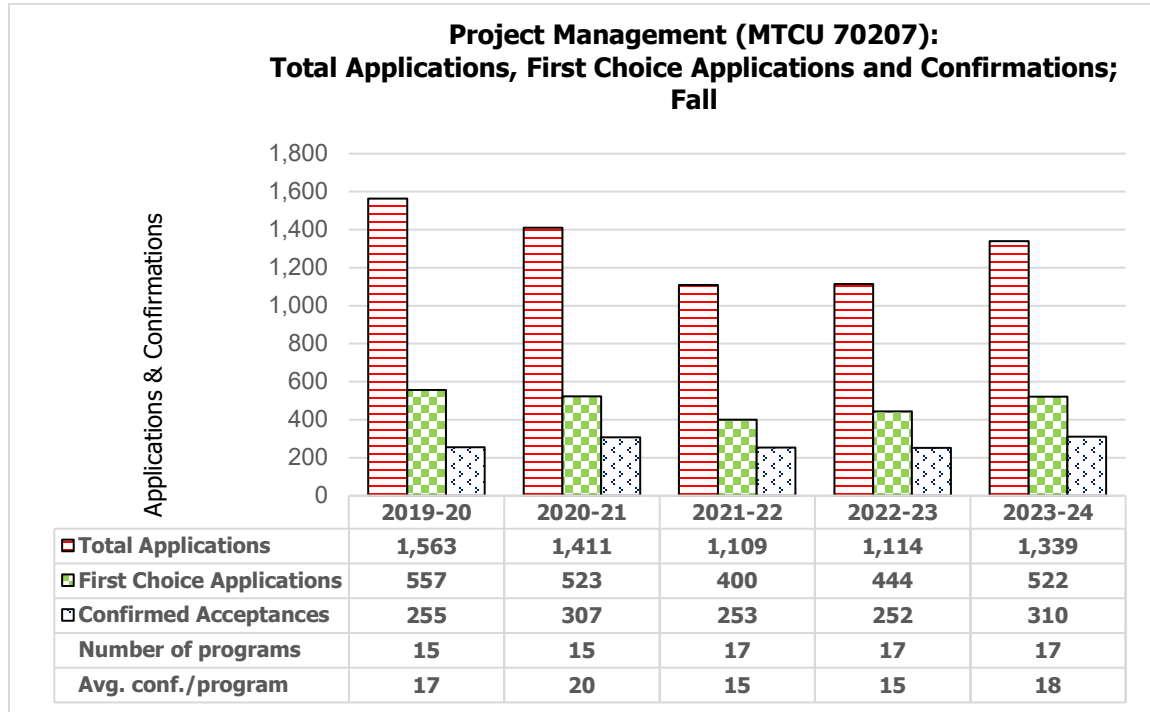
Source: OCAS Data Warehouse, accessed: March 2025.

Average year-over-year growth is presented below:

- The average growth[24] between 2019 and 2023 for total applications was negative two point six per cent.
- The average growth between 2019 and 2023 for first choice applications was negative zero point three per cent.
- The average growth between 2019 and 2023 for confirmed acceptances was six point four per cent.

There has been a relatively consistent level of domestic confirmed acceptances in fall intakes of Project Management programs at CAATs over the past five years.

The following table presents the total applications, first choice applications, and confirmed acceptances to the Fall intake of the Project Management programs (MTCU 70207) across the CAAT system:

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[24] Average Growth refers to the average change each year.

Domestic Applicant Interest in Fall Project Management (MTCU 70207) Programs at Ontario CAATs							
College	**Measure**	**2019-20**	**2020-21**	**2021-22**	**2022-23**	**2023-24**	**Rolling Avg. Change**
CAAT	**Total Applications**	1,563	1,411	1,109	1,114	1,339	-3%
	First Choice Applications	557	523	400	444	522	0%
	Confirmations	255	307	253	252	310	6%

Source: OCAS Data Warehouse, accessed: March 2025.

There has been consistent levels of domestic applications and confirmations for Project Management programs at CAATs over the past five years.

The following figure displays system-wide domestic applications, first choice applications and confirmed acceptances for the Winter intake of the Project Management programs in Ontario (MTCU 70207):

Project Management (MTCU 70207): Total Applications, First Choice Applications and Confirmations; Winter

	2019-20	2020-21	2021-22	2022-23	2023-24
Total Applications	897	819	634	845	1,108
First Choice Applications	295	313	219	312	381
Confirmed Acceptances	134	214	131	220	254
Number of programs	13	13	16	17	17
Avg. conf./program	10	16	8	13	15

Source: OCAS Data Warehouse, accessed: March 2025.

Average year-over-year growth is presented below:
- The average growth[25] between 2019 and 2023 for total applications was eight point three per cent.
- The average growth between 2019 and 2023 for first choice applications was 10.2 per cent.

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[25] Average Growth refers to the average change each year.

- The average growth between 2019 and 2023 for confirmed acceptances was 26.1 per cent.

There has been growing domestic interest in the Winter intake of Project Management programs at CAATs over the past five years.

The following table presents the total applications, first choice applications, and confirmed acceptances for the Winter intake of the Project Management programs (MTCU 70207) across the CAAT system:
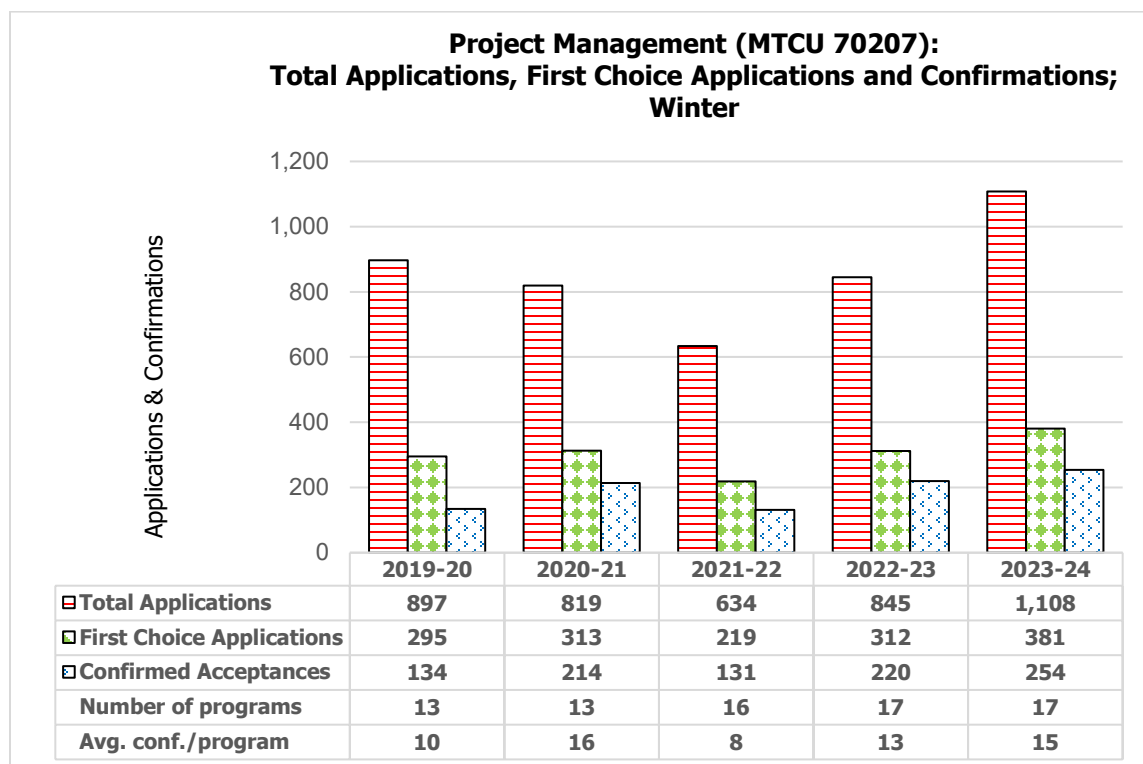
College	Measure	2019-20	2020-21	2021-22	2022-23	2023-24	Rolling Avg. Change
CAAT	**Total Applications**	897	819	634	845	1,108	8%
	First Choice Applications	295	313	219	312	381	10%
	Confirmations	134	214	131	220	254	26%

Source: OCAS Data Warehouse, accessed: March 2025.

Table title: **Domestic Applicant Interest in Winter Project Management (MTCU 70207) Programs at Ontario CAATs**

Overall, there has been an increase in domestic applications and confirmations for the Winter intake of Project Management programs.

The following figure displays system-wide domestic applications, first choice applications and confirmed acceptances for the Spring intake of the Project Management programs in Ontario (MTCU 70207):

28

Project Management (MTCU 70207):
Total Applications, First Choice Applications and Confirmations;
Spring

	2019-20	2020-21	2021-22	2022-23	2023-24
Total Applications	498	502	489	564	785
First Choice Applications	186	184	164	193	331
Confirmed Acceptances	79	135	117	119	169
Number of programs	13	13	16	16	17
Avg. conf./program	6	10	7	7	10

Source: OCAS Data Warehouse, accessed: March 2025.

Average year-over-year growth is presented below:
- The average growth[26] between 2019 and 2023 for total applications was 26.6 per cent.
- The average growth between 2019 and 2023 for first choice applications was 25.7 per cent.
- The average growth between 2019 and 2023 for confirmed acceptances was 53.9 per cent.

There has been relatively consistent domestic interest in the Spring intake of Project Management programs at CAATs over the past five years.
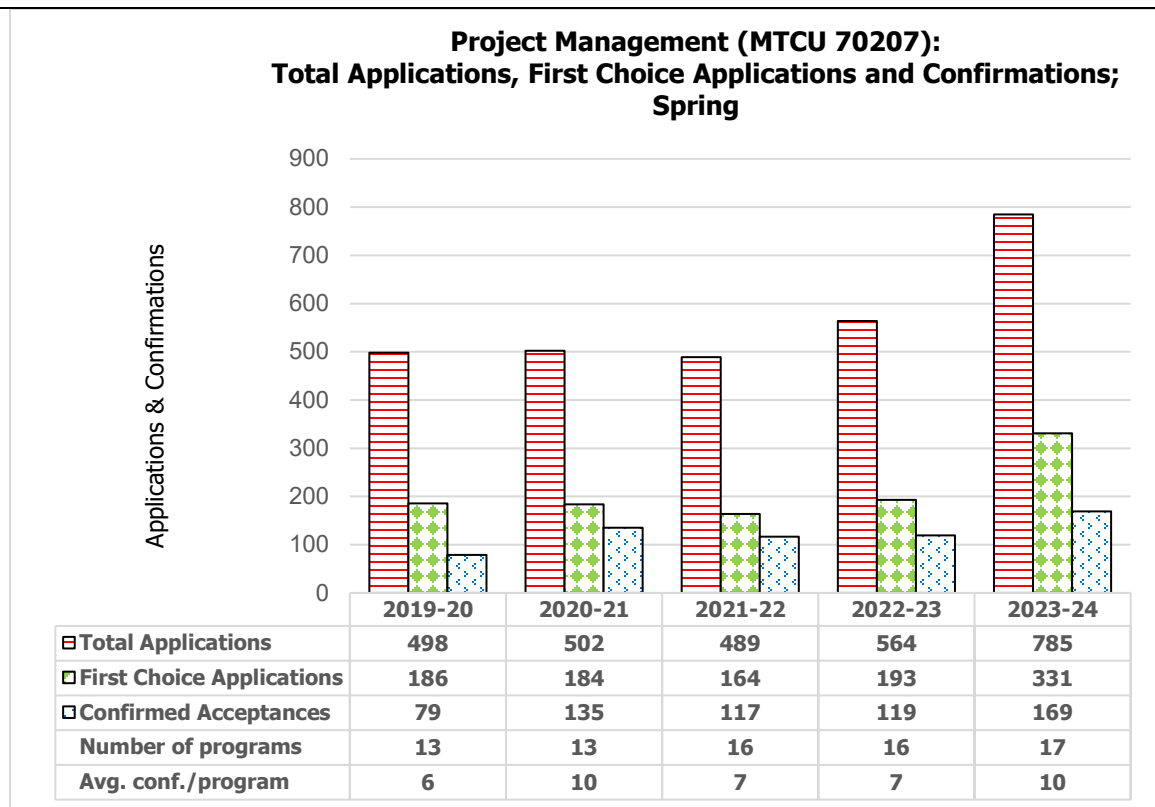
The following table presents the total applications, first choice applications, and confirmed acceptances for the Spring intake of the Project Management programs (MTCU 70207) across the CAAT system:

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[26] Average Growth refers to the average change each year.

Domestic Applicant Interest in Spring Project Management (MTCU 70207) Programs at Ontario CAATs							
College	**Measure**	**2019-20**	**2020-21**	**2021-22**	**2022-23**	**2023-24**	**Rolling Avg. Change**
CAAT	**Total Applications**	498	502	489	564	785	13%
	First Choice Applications	186	184	164	193	331	19%
	Confirmations	79	135	117	119	169	25%

Source: OCAS Data Warehouse, accessed: March 2025.

6.2 Enrolment

The following figure displays system-wide first semester enrolments, domestic and international for the Fall intake for Project Management programs at Ontario CAATs (MTCU 70207):
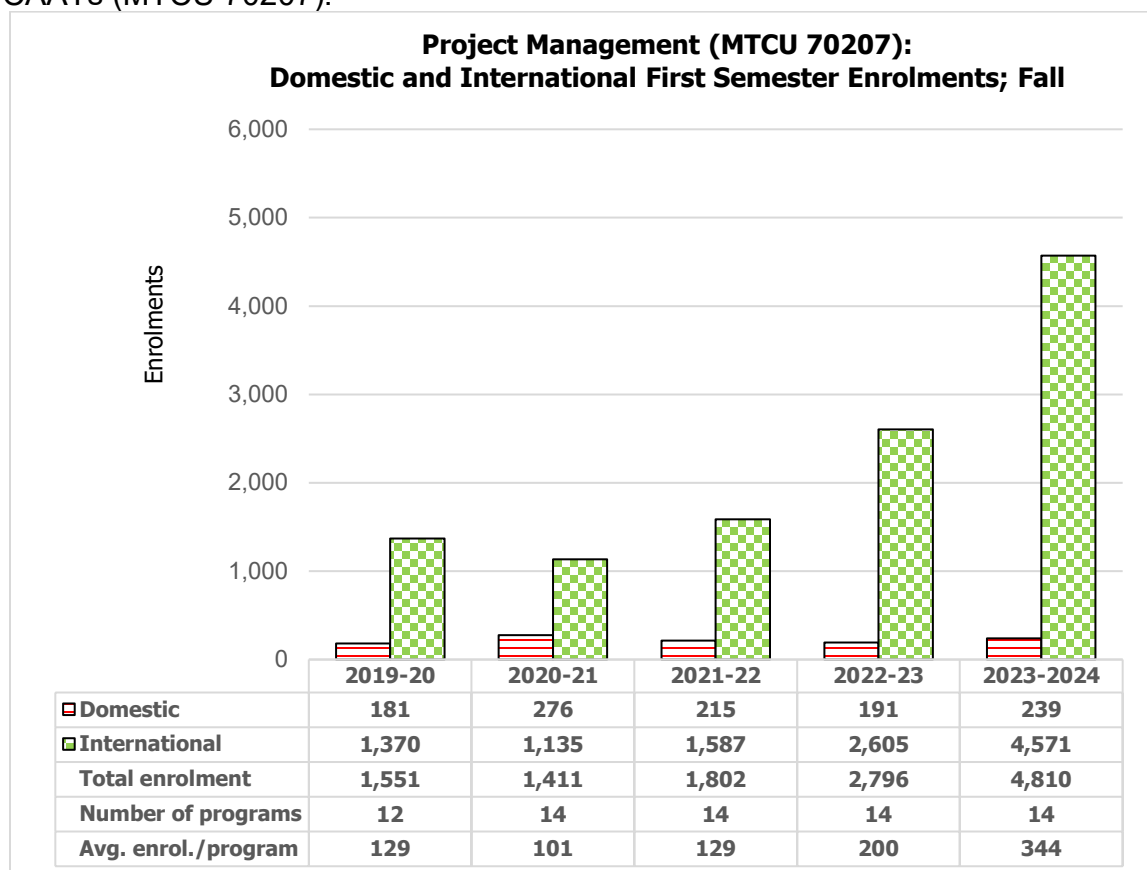
Project Management (MTCU 70207): Domestic and International First Semester Enrolments; Fall

	2019-20	2020-21	2021-22	2022-23	2023-2024
Domestic	181	276	215	191	239
International	1,370	1,135	1,587	2,605	4,571
Total enrolment	1,551	1,411	1,802	2,796	4,810
Number of programs	12	14	14	14	14
Avg. enrol./program	129	101	129	200	344

Source: OCAS Data Warehouse, accessed: March 2025

Average year-over-year growth is presented below:

- The average growth[27] between 2019 and 2023 for domestic enrolments was 11.1 per cent.
- The average growth between 2019 and 2023 for international enrolments was 40.6 percent.
- The average growth between 2019 and 2023 for total enrolments was 36.5 per cent.

International enrolments increased dramatically for Fall intake in 2023-24. Domestic enrolments have been steadily the same for the past five years.

The following figure displays system-wide first year enrolments, domestic and international for the Winter intake for Project Management programs at Ontario CAATs (MTCU 70207):

Project Management (MTCU 70207): Domestic and International First Semester Enrolments; Winter

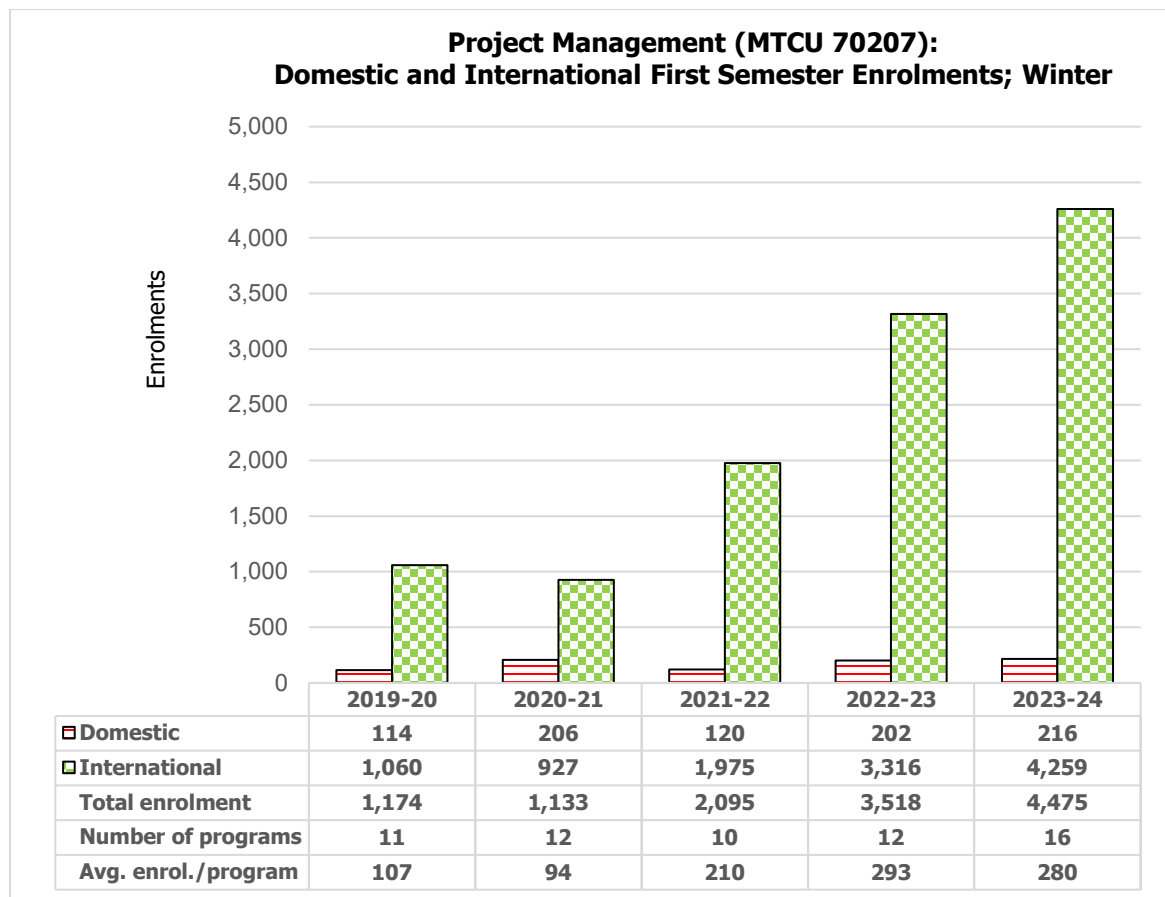|	2019-20	2020-21	2021-22	2022-23	2023-24
Domestic	114	206	120	202	216
International	1,060	927	1,975	3,316	4,259
Total enrolment	1,174	1,133	2,095	3,518	4,475
Number of programs	11	12	10	12	16
Avg. enrol./program	107	94	210	293	280

Source: OCAS Data Warehouse, accessed: March 2025.

Average year-over-year growth is presented below:
- The average growth[28] between 2019 and 2023 for domestic enrolments was 28.6 per cent.
- The average growth between 2019 and 2023 for international enrolments was 49.2 per cent.
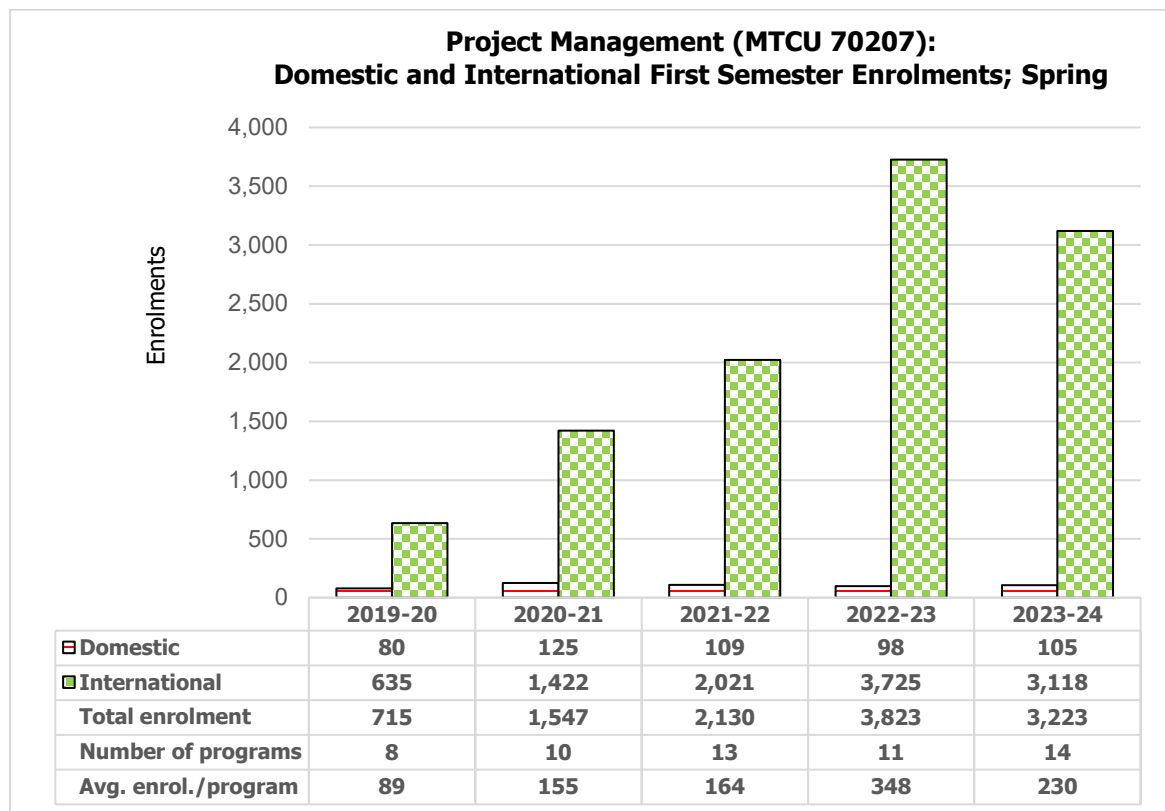
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[27] Average Growth refers to the average change each year.
[28] Average Growth refers to the average change each year.

- The average growth between 2019 and 2023 for total enrolments was 44.1 per cent.

There has an increase in domestic enrolments in the Winter intake of Project Management programs at CAATs over the past five years. International enrolments increased dramatically for the Winter intake of the 2023-24 academic year.

The following figure displays system-wide first year enrolments, domestic and international for the Spring intake of Project Management programs at Ontario CAATs (MTCU 70207):

Project Management (MTCU 70207):
Domestic and International First Semester Enrolments; Spring

	2019-20	2020-21	2021-22	2022-23	2023-24
Domestic	80	125	109	98	105
International	635	1,422	2,021	3,725	3,118
Total enrolment	715	1,547	2,130	3,823	3,223
Number of programs	8	10	13	11	14
Avg. enrol./program	89	155	164	348	230

Source: OCAS Data Warehouse, accessed: march 2025.

Average year-over-year growth is presented below:
- The average growth[29] between 2019 and 2023 for domestic enrolments was 10.1 per cent.
- The average growth between 2019 and 2023 for international enrolments was 58.5 per cent.
- The average growth between 2019 and 2023 for total enrolments was 54.5 per cent.

There has been limited but relatively stable domestic enrolments for the Spring intake of Project Management programs at CAATs over the past five years.

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[29] Average Growth refers to the average change each year.

International enrolments increased dramatically for the Spring intake of the 2022-23 academic year.

The following table presents five years of domestic and international Fall, Winter, and Spring enrolments for Project Management programs at Ontario CAATs (MTCU 70207):

Project Management (MTCU 70207) First Semester Enrolment – Domestic							
College	**Term**	**2019-20**	**2020-21**	**2021-22**	**2022-23**	**2023-24**	**Rolling Avg. Change**
CAAT	**Fall**	181	276	215	191	239	11%
	Winter	114	206	120	202	216	29%
	Spring	80	125	109	98	105	10%

Source: OCAS Data Warehouse, accessed March 2025.

Project Management (MTCU 70207) First Semester Enrolment – International							
College	**Term**	**2019-20**	**2020-21**	**2021-22**	**2022-23**	**2023-24**	**Rolling Avg. Change**
CAAT	**Fall**	1,370	1,135	1,587	2,605	4,571	41%
	Winter	1,060	927	1,975	3,316	4,259	49%
	Spring	635	1,422	2,021	3,725	3,118	59%

Source: OCAS Data Warehouse, accessed March 2025.

Overall, enrolment in Project Management programs has been growing over the past five years, especially with international students.

The table below displays the catchment loss from the Durham catchment to CAATs offering the same program over the last five years:

Project Management (MTCU 70207) First Semester Enrolment – Domestic Catchment Loss							
College	**Term**	**2019-20**	**2020-21**	**2021-22**	**2022-23**	**2023-24**	**Rolling Avg. Change**
CAAT	**Fall**	17	22	16	13	39	46%
	Winter	9	14	3	12	14	73%
	Spring	11	7	9	12	9	0%

Source: OCAS Data Warehouse, accessed March 2025.

6.3 Program Performance

The following table presents aggregate results from the Graduate Outcomes and Employer Survey[30] (GOES) for Project Management programs offered at CAATs. The Graduate Outcomes and Employer Survey measures the satisfaction of

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[30] The Graduate Outcome and Employer Satisfaction Survey replaced the prior KPI Graduate and Employer Survey. This survey is conducted by all CAAT colleges in order to measure 4 KPI's Graduate Employment Rate, Graduate Satisfaction Rate, Employer Satisfaction Rate, Graduation Rate.

33

Ontario College graduates with their college education and employment outcomes following graduation. It assesses perceptions on how well the college experience has prepared them to meet their goals after graduation as well as the needs of their employers. These results will be further explored in the subsequent sections.

System Graduate and Employment GOES Results					
	2018-19	**2019-20**	**2020-21**	**2021-22**	**2022-23**
Graduate Satisfaction **Project Management (MTCU 70207)**					
CAAT	65.9%	73.4%	68.4%	78.1%	75.2%
GOES Graduation Rate (domestic) **Project Management (MTCU 70207)**					
CAAT	83.0%	81.5%	83.1%	73.2%	79.6%
Graduate Employment Rate **Project Management (MTCU 70207)**					
CAAT	70.5%	77.9%	72.2%	88.7%	85.7%
Graduate Related Employment Rate – **Project Management (MTCU 70207)**					
CAAT	60.1%	50.9%	49.6%	58.1%	62.0%

https://www.ontario.ca/page/college-graduation-satisfaction-and-job-rates

6.4 Student Experience

In 2021-22 the Ontario Colleges Student Experience Survey was administered by the Ontario College Application Service (OCAS) to 22 CAATs[31]. The survey assesses the student experience according to three key capstone questions. These questions focus on the program specific content and skills, teaching and learning and work integrated learning.

Student Experience – Project Management (MTCU 70207)								
	Knowledge + Skills			**Teaching + Learning**			**Work Integrated Learning**		
College	**2021-22**	**2022-23**	**2023-24**	**2021-22**	**2022-23**	**2023-24**	**2021-22**	**2022-23**	**2023-24**
CAAT	87.3%	90.1%	87.6%	81.4%	85.5%	84.0%	95.6%	92.7%	91.9%

7. Analysis of Competition

Project Management OCGCs are currently offered at 16 CAATs under the MTCU code 70207. However, only four have a focus on information technology.

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[31] The Student Experience Survey is a voluntary and confidential survey of Full-Time DC Students administered by the Ontario College Application Service during the Winter semester. 22 of the publicly funded CAATs participate in the Student Experience Survey.

34

The proposed program aligns with the core project management curriculum of similar offerings in Ontario; however, differentiates itself through the focus on cybersecurity, privacy, compliance, and emerging technologies (such as AI, blockchain, and IoT). It also complements existing DC programs in Computer Programming, Computer Systems Technology, Business Administration - Supply Chain and Operations Management, Artificial Intelligence, Cybersecurity, and Data Analytics for Business Decision-Making (now Applied Data Analytics at DC, offering a pathway for continuing education.

Given the strong global growth in both the project management and IT services industries and the program's potential to meet the projected job growth in the Durham Region, particularly in areas related to the program, offers a significant opportunity, DC would benefit from offering the proposed Project Management – Information Technology OCGC.

8. **Target Market**

The target market for the proposed program includes domestic and international students possessing an Ontario College Diploma, Ontario College Advanced Diploma or degree an IT-specific discipline.

9. Operating Revenue and Expenses

The following tables summarize the net contribution for the proposed Project Management – Information Technology, Ontario College Graduate Certificate program.

Student Enrolment (YR 1)	2026-27 Projection	2027-28 Projection	2028-29 Projection	2029-30 Projection	2030-31 Projection
Projected enrolment (domestic)	5	5	10	10	10
Projected enrolment (international)	10	15	20	25	30
Total	**15**	**20**	**30**	**35**	**40**

Net Contribution	2026-27 Projection	2027-28 Projection	2028-29 Projection	2029-30 Projection	2030-31 Projection
Total Direct Program Expenses	108,031	116,129	129,700	137,960	146,306
Total Revenue for Program	179,145	253,056	372,010	453,246	538,390
Net Contribution $	**71,113**	**136,927**	**242,310**	**315,286**	**392,084**
Net Accumulated Contribution / (Deficit)	71,113	208,041	450,351	765,636	1,157,721
Net Contribution - % of Gross Revenue	39.7%	54.1%	65.1%	69.6%	72.8%
Target Net Contribution	**Breakeven**	**35.0%**	**35.0%**	**35.0%**	**35.0%**
Capital Requirement	0	0	0	0	0

DURHAM COLLEGE
SUCCESS MATTERS

Revenue	2026-27 Projection	2027-28 Projection	2028-29 Projection	2029-30 Projection	2030-31 Projection
Tuition Fees per academic year (domestic)	3,635	3,635	3,635	3,635	3,635
Set-Aside Fee Removed (domestic)	(364)	(364)	(364)	(364)	(364)
Tuition Fee realized by college (domestic)	3,272	3,272	3,272	3,272	3,272
Tuition Fees per academic year (international)	12,587	12,964	13,353	13,754	14,166
Set-Aside Fee Removed (international)	(243)	(249)	(255)	(261)	(267)
International Student Recovery	(750)	(750)	(750)	(750)	(750)
International Commission Recruitment	(1,460)	(1,494)	(1,529)	(1,565)	(1,602)
Tuition Fee realized by college (international)	13,768	14,106	14,455	14,813	15,182
Total Tuition Fees (domestic)	16,358	16,358	32,717	32,717	32,717
Total Tuition Fees (international)	137,685	211,596	289,090	370,326	455,470
Program Wtd Funding Unit (domestic only)	1.21	1.21	1.21	1.21	1.21

37

Agenda Page 51

Revenue	2026-27 Projection	2027-28 Projection	2028-29 Projection	2029-30 Projection	2030-31 Projection
Grant - MTCU Operating (Assume $4149/wfu)	25,101	25,101	50,203	50,203	50,203
Total Revenue (domestic)	**41,460**	**41,460**	**82,920**	**82,920**	**82,920**
Total Revenue (international)	**137,685**	**211,596**	**289,090**	**370,326**	**455,470**

Expenditures	2026-27 Projection	2027-28 Projection	2028-29 Projection	2029-30 Projection	2030-31 Projection
Salaries - Faculty (FT)	0	0	0	0	0
Salaries - Co-ordinator Allowance	0	0	0	0	0
Salaries - PT Teaching	73,920	76,138	78,422	80,774	166,395
Salaries - PL Teaching	0	0	0	0	0
Salaries - Sessional Teaching	0	0	0	0	0
Contract Teaching	0	0	0	0	0
Total Teaching Salaries	**73,920**	**76,138**	**78,422**	**80,774**	**166,395**
Support Staff	3,750	3,825	3,902	3,980	4,059
Total Academic Support Costs	**3,750**	**3,825**	**3,902**	**3,980**	**4,059**
Benefits - Faculty - FT 27.5%	0	0	0	0	0

38

Agenda Page 52

Expenditures	2026-27 Projection	2027-28 Projection	2028-29 Projection	2029-30 Projection	2030-31 Projection
Benefits - Faculty - PT 17.5%	12,936	13,324	13,724	14,136	29,119
Benefits - SS (FT) 31.5%	1,181	1,205	1,229	1,279	1,279
Total Employee Benefits	**14,117**	**14,529**	**14,953**	**15,389**	**30,398**
Total Labour	**91,787**	**94,492**	**97,276**	**100,143**	**200,852**
Instructional Supplies	0	0	0	0	0
Instructional Other Costs	0	0	0	0	0
Field Work	0	0	0	0	0
Membership & Dues	0	0	0	0	0
Professional Development	0	0	0	0	0
Travel/accommodation/ meals	0	0	0	0	0
Promotion/Public relations	0	0	0	0	0
Maintenance-Equipment	0	0	0	0	0
Telecommunications	0	0	0	0	0
Software Costs	16,244	21,637	32,424	37,817	43,211
Contracted Services	0	0	0	0	0
Rental	0	0	0	0	0

39

Agenda Page 53

Expenditures	2026-27 Projection	2027-28 Projection	2028-29 Projection	2029-30 Projection	2030-31 Projection
Total Other Expenditure	16,244	21,637	32,424	37,817	43,211

40

Report Number: BOG-2025-44

To: Board of Governors

From: Dr. Jean Choi, Vice President, Academic and Students

Date of Report: April 23, 2025

Date of Meeting: May 7, 2025

Subject: New Program Development: Cloud and Information Technology Systems

1.   Purpose

To seek approval from the Board of Governors for the following post-secondary program of instruction for Fall 2026 intake:

Cloud and Information Technology Systems
- Credential: Ontario College Diploma (OCD)
- Duration: Four semesters
- Faculty: Business and Information Technology (BIT)

2.   Recommendation

It is recommended to the Durham College Board of Governors:

That in accordance with Report BOG-2025-44 the proposed Cloud and Information Technology Systems Ontario College Diploma program be approved.

3.   Background

The Cloud and Information Technology Systems OCD is designed to meet the demands of the current and future Information Technology landscape. The proposed program prepares students with essential skills in computer architecture, cloud computing, cyber security, virtualization, DevOps, Information Technology (IT) project management, application programming, computing networking, operating systems, databases and modern-day compliance and ethics in IT.

Graduates possess the knowledge and skills to build, manage and support modern digital applications on-premises (on-prem) or in the cloud, while adhering to required security and compliance standards. Graduates of the program are prepared to tackle the ever-changing landscape of modern IT infrastructure that

is progressively delivered in the cloud and infused with Artificial Intelligence technologies. Upon program completion graduates are equipped to challenge Amazon Web Services (AWS) industry standard Cloud Technologies certification at both the entry and associate level.

As per the Ministry of Training, Colleges and Universities' Minister's Binding Policy Directive 3.0, Programs, Framework for Programs of Instruction, the Board of Governors is responsible for approving programs of instruction the college will offer.

It is the role of the Durham College Board of Governors to ensure that programs of instruction are developed and implemented in conformity with the Credentials Framework and are consistent with provincial program standards where they exist. It is also the responsibility of the Board to ensure that all new and modified post-secondary programs of instruction lead to one of the following credentials: Durham College Certificate, Ontario College Certificate, Ontario College Diploma, Ontario College Advanced Diploma, Ontario College Graduate Certificate or Baccalaureate Degree.

We confirm that Durham College is in compliance with all Minister's Binding Policy Directives as noted above, for this new program of instruction.

4. Discussion/Options

Based on the environmental scan completed by Institutional Research and Planning, it is expected that the proposed Cloud and Information Technology Systems OCD would be a beneficial addition to the College's program offerings due to several reasons.

- The cloud computing industry is experiencing significant growth with businesses across all sectors transitioning to cloud-based infrastructures, thus increasing job demand.
- Government initiatives and regulatory frameworks (e.g., Personal Information Protection and Electronic Documents Act (PIPEDA), ISO 27001) reinforce the need for skilled cloud professionals in cybersecurity and compliance.
- Strong employer demand for graduates with cloud computing expertise, particularly in cloud architecture, DevOps, and cloud security in Ontario and across Canada.
- Currently, no cloud-focused diploma program exists at Durham College (DC), providing a unique offering within the Faculty of BIT.
- The program integrates preparation for in-demand cloud certifications (AWS, Azure), enhancing graduate employability.
- Cloud computing is a future-proof field, with demand expected to grow as industries continue digital transformation efforts.

- Increase in enrolments for both domestic and international students over the past five years in related programs at Ontario Colleges of Applied Arts and Technology (CAATs).
- The program aligns well with DC's strategic goals of offering industry-relevant, high-employability programs.

5. Financial/Human Resource Implications

The proposed OCD will submit a Request for Approval for Funding to the Ministry of Colleges, Universities, Research Excellence and Security (MCURES) for a base tuition of $2722.00.

The proposed new program is projected to exceed the targeted contribution in Year One.

6. Implications for the Joint Campus Master Plan

There are no implications for the joint campus master plan.

7. Implications for Ontario Tech University

There are no anticipated implications for Ontario Tech University.

8. Relationship to the Strategic Plan/Business Plan

The proposed program aligns with of the Academic Plan, and the Our Students pillar of the Strategic, and Business Plans.

The proposed Cloud and Information Technology Systems OCD was carefully designed to align with the strategic objectives outlined in the Academic, Strategic, and Business plans, ensuring it not only meets but advances the college's mission and goals.

8.1 Academic Plan

Goal 1: Ensure Exceptional Quality in our Academic Programs

The proposed program maintains an intensive focus on cloud computing ensuring students receive high-quality, industry-relevant education. The curriculum has been developed in consultation with industry experts to maintain the highest standards and professional relevance and ensure students are equipped with the knowledge and skills to challenge industry standard Cloud Technologies certifications upon graduation.

Goal 2: Enhance Exemplary Teaching and Learning Practices

By incorporating interactive learning experiences, real-world case studies, and advanced technological tools, the proposed program exemplifies innovative teaching practices, enhancing student engagement and learning outcomes.

Goal 4: Intensify and Strengthen the College's Applied Research Agenda

With a focus on cloud-based infrastructure, the proposed program encourages students to engage in applied research projects that contribute to advancing this field, fostering a strong research culture related to emerging and expanding cloud-based technologies.

8.2 Strategic and Business plans

Pillar: Our Students
Goal: To educate and inspire students to realize success in their careers and communities.

The field of cloud computing is a rapidly growing industry, with a strong and escalating demand for skilled professionals who can design, implement, and manage cloud-native applications across various deployment models. The proposed program is designed to address current labour market needs while remaining responsive to the evolving demands of emerging technologies. It focuses on equipping students with the skills required to thrive in the global cloud computing landscape.

The program's capstone course actively engages industry partners and community stakeholders, offering students valuable opportunities for applied research and hands-on learning. These experiences provide students with the practical knowledge needed to solve real-world cloud computing challenges while deepening their understanding of the industry's evolving needs.

This program builds transferable and durable skills such as teamwork, critical thinking, time management, collaboration, communication, and presentation. These essential skills, alongside technical expertise in cloud computing, ensures graduates are well-prepared to adapt to a variety of professional environments and succeed in a dynamic, global industry.

9. Fit with Existing Ontario College Programs

DC's proposed Cloud and Information Technology Systems OCD specifically addresses the rapid expansion of cloud-based provides students with foundational and advanced knowledge in cloud computing, system architecture, and cybersecurity, equipping them with practical skills to design, deploy, and manage cloud-based infrastructures. Currently, 21 CAATs offer a Computer Systems Technician OCD program (MTCU 50505); however, no CAAT offers a credential with a dedicated focus on cloud computing and associated technology.

Many of the newer Computer Systems Technician OCD programs incorporate cloud computing courses into their curriculum, reflecting the industry's evolving demands and as such, it was determined to be most relevant to compare the proposed program with these programs for the environmental scan (MTCU 50505). DC's proposed program differentiates itself by focusing on architecting and securing cloud environments, preparing students for the demands of modern IT infrastructure.

General Program Information

Proposed Program Title	Cloud and Information Technology Systems
Proposed Credential	Ontario College Diploma (OCD)
Academic Dean	Cristina Italia
Date of Review by PPRC	April 9, 2025
MTCU Code	50511 (Program Description)
Weight and Funding Unit (as per APS table)	Weight = 1.3 Funding Unit = 1.7
Proposed Tuition	$2,722.04
Classification of Instructional Program (CIP) Code(s)	11.0902 (PGWP eligible)
NOC Codes	20012, 22220, 21323
Proposed Implementation (Year)/ Scheduled Intakes (F/W/S):	2026, Fall
Year 1 enrolment	35
Number of sections, Y1	One
International students, seat allocation	15
Number of Semesters	Four
Total hours	1232
New or replacement program	New
Number of new FT/PT faculty	One FT, Three PT for Year-one
Program delivery methods	Classroom and Computer Lab
Bring Your Own Device (BYOD)	Yes
New or renovated space requirements	n/a
Total capital costs	$0
Additional software costs (for college or for student)	$0

1

1.   Approval Stages

The following approval stages have been assessed for this program:

☒ Labour Market Analysis
☒ Student Demand
☒ Budget reviewed and approved by the Chief Financial Officer and the Vice President Academic and Students
☒ Presented to the Program Proposal Review Committee (DATE: April 9, 2025)
☒ Reviewed by the Director, Academic Quality (DATE: April 24, 2025)
☒ Reviewed by the Dean, Teaching, Learning and Academic Quality (DATE: April 23, 2025)
☒ New Program Proposal Summary (budget) reviewed by the Chief Financial Officer
☒ Approved by Vice-President, Academic and Students (DATE: April 28, 2025)
☒ Reviewed and approved by President (DATE: April 28, 2025)

2.   Program Overview

Durham College (DC) is proposing to offer a Cloud and Information Technology Systems Ontario College Diploma (OCD) within the Faculty of Business and Information Technology (BIT).

2.1   Program Description

The Cloud and Information Technology Systems OCD is designed to meet the demands of the current and future Information Technology landscape. The proposed program prepares students with essential skills in computer architecture, cloud computing, cyber security, virtualization, DevOps, Information Technology (IT) project management, application programming, computing networking, operating systems, databases and modern-day compliance and ethics in IT.

Graduates possess the knowledge and skills to build, manage and support modern digital applications on-premises (on-prem) or in the cloud, while adhering to required security and compliance standards. Graduates of the program are prepared to tackle the ever-changing landscape of modern IT infrastructure that is progressively delivered in the cloud and infused with Artificial Intelligence technologies. Upon program completion graduates are equipped to challenge Amazon Web Services (AWS) industry standard Cloud Technologies certification at both the entry and associate level.

2.2   Career Outcomes

Employability for program graduates is available across an array of Information Technology disciplines across an array of sectors and in-demand roles in cloud administration, DevOps, cybersecurity and IT support.

2

The chart below shares prospective job titles and employment opportunities:

Job Titles	Where Graduates Might Work
• Infrastructure Support Engineer • Cloud Infrastructure Engineer • Cloud Practitioner • Application Support Engineer • Cloud Administrator • DevOps Engineer • Computer Technology Support Specialist	• Small, medium, and large enterprises across industries • Tech Companies (small, medium and large) • Public and private sector across industries • Startups across industries • Technology Consultancy Service Firms

2.3 Vocational Program Learning Outcomes (MTCU# 72900)

Vocational program learning outcomes (VLOs) for the proposed credential must be consistent with the requirements of the Ontario Credentials Framework and the Credential Validation Service.

The graduate of the program has reliably demonstrated the ability to:

1. Design and implement computer networking solutions (on-prem and in the cloud) to optimize system performance.
2. Implement secure cloud architectures and resources to protect data and meet client requirements.
3. Install, monitor, and maintain database management systems to ensure data integrity.
4. Complete all work in compliance with relevant policies, practices, processes and procedures within a cloud environment.
5. Communicate and collaborate with individuals, groups and interested parties to achieve project goals.
6. Interpret, produce and present documents and information to diagnose problems and implement solutions.
7. Identify and implement strategies to improve job performance and advance personal and professional growth.
8. Implement modern API-based applications to optimize digital ecosystem within client-based infrastructure.
9. Deploy micro-services solutions that are secure and highly available to address client needs.
10. Configure and administer client-server environment to support small to medium business operations.
11. Assist with project management to support the successful and timely delivery of information technology projects.
12. Install and manage virtualized and containerized environments within a client-based infrastructure.

2.4 Admission Requirements

- Ontario Secondary School Diploma (OSSD) or equivalent, mature student status.
  OR
  Relevant post-secondary and/or a minimum of three years related work experience may also be considered for admission.
- Proof of English language proficiency.
- Grade 12 English (C or U) at a minimum grade of 50%.
- Recommended: Computer Science or equivalent course and Grade 12 Math or equivalency.

2.5 Differentiation (Within DC)

The proposed Cloud and Information Technology Systems OCD focuses on computer and cloud architecture. The field of cloud operations is an industry with a demand for skilled professionals who can architect, deploy and manage highly secure, compliant and scalable modern applications on-prem or in the cloud. DC's proposed program will provide students with the skills to effectively operate in a Cloud environment, private or public, with a fundamental understanding of the core underlying technologies that are required for this industry.

There are various programs currently offered at DC that are related to the proposed program. DC's proposed program will differentiate itself by focusing on architecting and securing cloud environments, preparing students for the demands of modern IT infrastructure. Unlike DC's Cloud Computing Ontario College Graduate Certificate (OCGC), which is intended for students with prior IT experience, this new diploma program caters to students with limited technical backgrounds, offering a structured pathway into the cloud computing industry. The proposed program's focus on cloud services, cloud workflow automation, and optimizing cloud technologies for scalability, security and performance also distinguishes it from DC's Computer Systems Technology OCD which emphasizes computer systems, hardware, software and networking.

The following tables present the Graduate Count, Employment Rate and Employment Rate in a Related Field for the high affinity programs at DC related to the proposed Cloud and Information Technology Systems program. The Cloud Computing OCGC (MTCU 70522) is also a related program but does not have any available data as it is a new program.

4

Ministry Title: Computer Systems Technician (MTCU 50505)

Related Programs at Durham – Computer Systems Technician							
Program		Key Performance Indicator	Reporting Year				
Banner Code	MTCU Code		2018-19	2019-20	2020-21	2021-22	2022-23
CSTC	50505	Graduate Count	44	60	70	57	41
		Employment Rate	71.4% (7)	66.7% (9)	N/A	60.0% (5)	75.0% (4)
		Employment Rate in a Related Field	51.1% (7)	11.1% (9)		0.0% (0)	50.0% (4)

Ministry Title: Computer Systems Technology (MTCU 60505)

Related Programs at Durham – Computer Systems Technology							
Program		Key Performance Indicator	Reporting Year				
Banner Code	MTCU Code		2018-19	2019-20	2020-21	2021-22	2022-23
CSTY	60505	Graduate Count	26	55	50	43	33
		Employment Rate	90.0% (10)	54.5% (11)	80.0% (5)	80.0% (5)	100.0% (2)
		Employment Rate in a Related Field	60.0% (10)	18.2% (11)	60.0% (5)	60.0% (5)	100.0% (2)

Ministry Title: Artificial Intelligence Analysis, Design and Implementation (MTCU 70502)

Related Programs at Durham – Artificial Intelligence Analysis, Design and Implementation							
Program		Key Performance Indicator	Reporting Year				
Banner Code	MTCU Code		2018-19	2019-20	2020-21	2021-22	2022-23
AIDI	70502	Graduate Count			68	62	110
		Employment Rate	N/A		57.1% (7)	N/A	66.7% (3)
		Employment Rate in a Related Field			0.0% (7)		33.3% (3)

The proposed Cloud and Information Technology Systems OCD complements other core computer programming and computer systems diplomas offered by DC.

5

3. Program of Study

Semester 1	Semester 2	Semester 3	Semester 4
14 weeks	14 weeks	14 weeks	14 weeks
Computer Structures Classroom and Computer Lab 4 hours per week (●)	Introduction to Cloud Computing Classroom and Computer Lab 4 hours per week (■)	IT Project Management Classroom 3 hours per week (♪)	DevOps Fundamentals Classroom and Computer Lab 4 hours per week (■)
Fundamentals of Linux OS Classroom and Computer Lab 4 hours per week (●)	Communications for IT Classroom 3 hours per week (♪)	Linux Server Administration Classroom and Computer Lab 4 hours per week (●)	Cloud Architecting Classroom and Computer Lab 4 hours per week (■)
Programming Fundamentals Classroom and Computer Lab 4 hours per week (♥)	Windows Client-Server Administration Fundamentals Classroom and Computer Lab 4 hours per week (●)	Introduction to Public Cloud Classroom and Computer Lab 4 hours per week (■)	Cloud Developing Classroom and Computer Lab 4 hours per week (■)
Professional Issues in Computing Classroom and Computer Lab 4 hours per week (♪)	Database Fundamentals & Administration Classroom and Computer Lab 4 hours per week (♥)	Modern Application Programming Classroom and Computer Lab 4 hours per week (♥)	Cloud Security Classroom and Computer Lab 4 hours per week (■)
Virtualization Technology Fundamentals Classroom 3 hours per week (●)	Computer Networks for Communications Classroom and Computer Lab 4 hours per week (●)	OS and Web Security Fundamentals Classroom and Computer Lab 4 hours per week (♦)	Cloud and Information Technology Systems Capstone Classroom 3 hours per week (♣)
Communications Foundations Classroom and Online 3 hours per week (▲)	GNED Classroom and Online 3 hours per week (▲)	GNED Classroom and Online 3 hours per week (▲)	GNED Classroom and Online 3 hours per week (▲)
308 hours	308 hours	308 hours	308 hours

Themes:

Cloud Computing Fundamentals (■)

Compliance Communications and IT Fundamentals (♪)

Computer Architecture & Operating Systems Management (●)

Application Programming and Deployment (♥)

Security (♦)

Experiential Learning (♣)   General Education (▲)

Agenda Page 65

3.1 Course Descriptions

Semester 1

Course Title: Computer Structures
Course description: Explore the evolution of computing technology, starting with the history of computing, and progressing through the intricacies of machine language and higher-level languages. Study computer architecture, examining the design and organization of computer systems that contributes to effective computer system performance.
Instructional Setting: Classroom and Computer Lab
Total Hours (Semester): 56

Course Title: Fundamentals of Linux OS
Course description: Examine the fundamental core concepts of Linux Operating Systems. Analyze the Linux operating system, starting with its architectural design and exploring various distributions and their use cases. Discuss concepts such as Linux file system, user management and file permission geared towards providing the skills needed to effectively manage and utilize Linux systems.
Instructional Setting: Classroom and Computer Lab
Total Hours (Semester): 56

Course Title: Programming Fundamentals
Course description: Develop a fundamental understanding of computer programming using Python programming language. Learn various forms of programming that form the building block of computer software development. Engage with core concepts like functions, object-oriented programming, iteration and logic structuring to acquire relevant and effective programming skills.
Instructional Setting: Classroom and Computer Lab
Total Hours (Semester): 56

Course Title: Virtualization Technology Fundamentals
Course description: Embark on a foundational exploration of core concepts of virtualization. Discover the operation and functions of hypervisors and their role in modern computing. Inspect virtual operating systems, host management and operations by deploying them both locally and within cloud environments.
Instructional Setting: Classroom and Computer Lab
Total Hours (Semester): 56

Course Title: Professional Issues in Computing
Course description: Examine professional, ethical and legal issues including jurisdictional legislation affecting privacy and security in computing. Examine strategies and methods to mitigate and address professional issues existing within current Information Technology work environments. Arm yourself with the knowledge of emerging trends, rules and risks in modern day computing to navigate the profession responsibly and effectively.
Instructional Setting: Classroom
Total Hours (Semester): 56

Semester 2

Course Title: Introduction to Cloud Computing
Course description: Examine the essential characteristics of cloud computing to comprehend its role in the current Information Technology ecosystem. Explore cloud computing fundamentals, its service and deployment models executions. Use private and public cloud core services to acquire fundamental knowledge and practice in cloud systems operations.
Instructional Setting: Classroom and Computer Lab
Total Hours (Semester): 56

Course Title: Communications for IT
Course description: Explore essential communication skills required in a professional and Information Technology environment. Practice and formulate effective verbal, written and electronic communication skills across traditional and technological mediums. Through practice and demonstrations, conveyance of information clearly and professionally in diverse contexts will be evaluated.
Instructional Setting: Classroom
Total Hours (Semester): 42

Course Title: Windows Client-Server Administration Fundamentals
Course description: Acquire foundational knowledge in Windows client-server administration. Explore and deploy fundamental concepts of windows client-server operation to devise systems that support professional activities. Apply skills to centrally administer and protect users and systems via flexible directory services that can operate between cloud and on-premises environments.
Instructional Setting: Classroom
Total Hours (Semester): 56

Course Title: Database Fundamentals & Administration
Course description: Explore the fundamentals of database systems. Install, design and administer relational and non-relational database systems. Examine and practice database query language to acquire an intricate understanding of data management. Apply newly learned skills and practice with the tools to gain proficiency in database management and administration.
Instructional Setting: Classroom and Computer Lab
Total Hours (Semester): 56

Course Title: Computer Networks and Communications
Course description: Explore the fundamentals of computer networking, the OSI and TCP/IP models. Examine how networks operate and are configured to deliver traffic across an array of mediums. Build, test, secure and troubleshoot networks to acquire a core understanding of how effective computer networks operate.
Instructional Setting: Classroom and Computer Lab
Total Hours (Semester): 56

Semester 3

Course Title: IT Project Management
Course description: Examine the fundamentals of project management connected to the Information Technology field. Explore strategies, methods and industry practices to successfully deliver Information Technology projects on time. Scope, constructure and document Information Technology project using relevant industry tool to effectively achieve project efficiency.
Instructional Setting: Classroom
Total Hours (Semester): 42
Pre-requisites: Professionals Issues in Computing

Course Title: Linux Server Administration
Course description: Acquire comprehensive essential skills in Linux server administration. Explore Linux server administration to acquire proficiency in maintaining Linux servers in the industry. Study existing and emerging trends, systems, processes and features essential to becoming a proficient Linux administrator.
Instructional Setting: Classroom and Computer Lab
Total Hours (Semester): 56
Pre-requisites: Fundamentals of Linux OS

Course Title: Introduction to Public Cloud
Course description: Obtain foundational and fundamental industry knowledge on public cloud computing. Explore the various core services offered by major public cloud computing vendors. Study and practice the deployment of public cloud features to support various business use cases.
Instructional Setting: Classroom and Computer Lab
Total Hours (Semester): 56
Pre-requisites: Introduction to Cloud Computing

Course Title: Modern Application Programming
Course description: Embark on an in-depth journey into the core concepts of modern application programming. Explore various tools and frameworks that promote high quality, efficient and flexible modern application development. Examine existing and emerging technologies powering modern scalable microservice applications.
Instructional Setting: Classroom and Computer Lab
Total Hours (Semester): 56
Pre-requisites: Programming Fundamentals

Course Title: OS and Web Security Fundamentals
Course description: Explore fundamental concepts and practices for delivering in-depth Operating Systems and application security in a connected world. Dive into policies, privilege management, perimeter control and system hardening reduces risk to computer systems. Develop system hardening proficiency through practice and security frameworks analysis.
Instructional Setting: Classroom and Computer Lab

Total Hours (Semester): 56

Semester 4

Course Title: DevOps Fundamentals
Course description: Explore the fundamental elements underpinning the concept of DevOps. Examine how development and operations teams work in tandem to continuously integrate and deliver modern applications. Inspect the automated DevOps workflow and common industry tools used to deliver modern applications from their sources to deployment environments.
Instructional Setting: Classroom and Computer Lab
Total Hours (Semester): 56
Pre-requisites: Modern Application Programming

Course Title: Cloud Architecting
Course description: Acquire the essential skill underpinning cloud architecting. Explore the requirements essential to constructing a well architected cloud deployment that meets industry standard. Study the automation, tools and services involved in architecting and maintaining highly available cloud computing environments.
Instructional Setting: Classroom and Computer Lab
Total Hours (Semester): 56
Pre-requisites: Introduction to Public Cloud

Course Title: Cloud Developing
Course description: Explore the essentials skills necessary to develop applications in the public cloud. Examine the requirements associated with natively developing or migrating an application to the public cloud. Compare the automation, tools and services involved in developing highly available and secure applications for a public cloud environment.
Instructional Setting: Classroom and Computer Lab
Total Hours (Semester): 56
Pre-requisites: Modern Application Programming

Course Title: Cloud Security
Course description: Embark on an in-depth journey into the fundamentals of cloud security. Examine how to secure, monitor and audit public cloud environments. Use the tools, services, frameworks and principals involved in administering a highly secure public cloud environment.
Instructional Setting: Classroom and Computer Lab
Total Hours (Semester): 56
Pre-requisites: OS and Web Security Fundamentals

Course Title: Cloud and Information Technology Systems Capstone
Course description: Pursue an in-depth cumulative project undertaking involving cloud computing. Use tools, knowledge and experience acquired throughout the study period to complete a project. Work with a faculty advisor to

10

shape a relevant project that incorporates the fundamentals skills attained throughout the study period.
Instructional Setting: Classroom
Total Hours (Semester): 42
Pre-requisites: IT Project Management

4. Strategic Alignment

The proposed program aligns with the Academic Plan, and the "Our Students" pillar of the Strategic and Business Plans.

The proposed Cloud and Information Technology Systems OCD was carefully designed to align with the strategic objectives outlined in the Academic, Strategic, and Business Plans, ensuring it not only meets but advances the college's mission and goals.

4.1 Academic Plan

Goal 1: Ensure Exceptional Quality in our Academic Programs

The proposed program maintains an intensive focus on cloud computing ensuring students receive high-quality, industry-relevant education. The curriculum has been developed in consultation with industry experts to maintain the highest standards and professional relevance and ensure students are equipped with the knowledge and skills to challenge industry standard Cloud Technologies certifications upon graduation.

Goal 2: Enhance Exemplary Teaching and Learning Practices

By incorporating interactive learning experiences, real-world case studies, and advanced technological tools, the proposed program exemplifies innovative teaching practices, enhancing student engagement and learning outcomes.

Goal 4: Intensify and Strengthen the College's Applied Research Agenda

With a focus on cloud-based infrastructure, the proposed program encourages students to engage in applied research projects that contribute to advancing this field, fostering a strong research culture related to emerging and expanding cloud-based technologies.

4.2 Strategic and Business plans

Pillar: Our Students
Goal: To educate and inspire students to realize success in their careers and communities.

The field of cloud computing is a rapidly growing industry, with a strong and escalating demand for skilled professionals who can design, implement, and manage cloud-native applications across various deployment models. The proposed program is designed to address current labour market needs while remaining responsive to the evolving demands of emerging technologies. It focuses on equipping students with the skills required to thrive in the global cloud computing landscape.

The program's capstone course actively engages industry partners and community stakeholders, offering students valuable opportunities for applied research and hands-on learning. These experiences provide students with the practical knowledge needed to solve real-world cloud computing challenges while deepening their understanding of the industry's evolving needs.

The proposed program builds transferable and durable skills such as teamwork, critical thinking, time management, collaboration, communication, and presentation. These essential skills, alongside technical expertise in cloud computing, ensures graduates are well-prepared to adapt to a variety of professional environments and succeed in a dynamic, global industry.

4.3 Fit with Existing Ontario College Programs

DC's proposed Cloud and Information Technology Systems OCD specifically addresses the rapid expansion of cloud-based provides students with foundational and advanced knowledge in cloud computing, system architecture, and cybersecurity, equipping them with practical skills to design, deploy, and manage cloud-based infrastructures. Currently, 21 Colleges of Applied Art and Technology (CAATs) offer a Computer Systems Technician OCD program (MTCU 50505); however, no CAAT offers a credential with a dedicated focus on cloud computing and associated technology.

Many of the newer Computer Systems Technician OCD programs incorporate cloud computing courses into their curriculum, reflecting the industry's evolving demands and as such, it was determined to be most relevant to compare the proposed program with these programs for the environmental scan (MTCU 50505). Durham College's proposed program differentiates itself by focusing on architecting and securing cloud environments, preparing students for the demands of modern IT infrastructure.

5. Labour Demand and Graduate Employment Possibilities

Based on the results of the environmental scan, it is expected that the proposed Cloud and Information Technology Systems OCD will be a beneficial addition to the College's program offerings due to several reasons.

12

- The cloud computing industry is experiencing significant growth with businesses across all sectors transitioning to cloud-based infrastructures, thus increasing job demand.
- Government initiatives and regulatory frameworks (e.g., Personal Information Protection and Electronic Documents Act (PIPEDA), ISO 27001) reinforce the need for skilled cloud professionals in cybersecurity and compliance.
- Strong employer demand for graduates with cloud computing expertise, particularly in cloud architecture, DevOps, and cloud security in Ontario and across Canada.
- Currently, no cloud-focused diploma program exists at DC, providing a unique offering within the Faculty of BIT.
- The program integrates preparation for in-demand cloud certifications (AWS, Azure), enhancing graduate employability.
- Cloud computing is a future-proof field, with demand expected to grow as industries continue digital transformation efforts.
- Increase in enrolments for both domestic and international students over the past five years in related programs at Ontario CAATs.
- The program aligns well with DC's strategic goals of offering industry-relevant, high-employability programs.

5.1 Labour Market Analysis

The cloud computing industry focuses on the design, deployment, and management of cloud-based infrastructures, applications, and services. Cloud computing enables businesses to leverage scalable, on-demand computing resources to enhance efficiency, security, and innovation. Organizations across industries, including healthcare, finance, government, and technology, are increasingly transitioning to cloud environments for their operational and data management needs. Cloud professionals work with cloud-based platforms and services, specializing in areas such as cloud architecture, cybersecurity, virtualization, DevOps, and artificial intelligence (AI) integration. The rapid growth of the cloud industry highlights the increasing demand for skilled professionals who can design and maintain cloud environments, ensuring secure, efficient, and scalable computing solutions.

Roles and Skills in Cloud Computing

The cloud computing industry provides career opportunities in roles such as cloud architects, cloud engineers, DevOps professionals, system administrators, network administrators, and cybersecurity specialists. These professionals work across various sectors to develop, deploy, and secure cloud-based infrastructures. Key responsibilities include configuring virtual networks, implementing cloud security measures, optimizing cloud storage solutions, and managing cloud-native applications.

13

Cloud professionals require a combination of technical and analytical skills, including knowledge of cloud platforms such as Amazon Web Services (AWS), Microsoft Azure, and Google Cloud Platform (GCP). They must also be proficient in automation, containerization (Docker, Kubernetes), scripting languages (Python, PowerShell), and IT security frameworks. Additionally, strong problem-solving, time management, and communication skills are essential for collaborating with stakeholders and ensuring seamless cloud integration.

Public vs. Private Cloud Solutions

The cloud computing market is divided into public, private, and hybrid cloud environments. Public cloud solutions, provided by companies like AWS, Azure, and Google Cloud, allow organizations to access scalable infrastructure without managing physical hardware. Private cloud solutions, often deployed by enterprises with strict security and compliance requirements, involve dedicated cloud environments managed internally or by third-party providers. Hybrid cloud environments combine both public and private cloud models, offering flexibility and security for businesses managing sensitive data. The demand for skilled professionals who can architect and manage these solutions continues to grow as industries prioritize cloud adoption.

Demand for Cloud Computing Professionals

The cloud computing industry is experiencing rapid expansion, driven by digital transformation, data security concerns, and the rise of AI-powered cloud services. According to the Global Cloud Computing Market Report, the industry was valued at 626.4 billion USD in 2023 and is projected to reach 1.3 trillion USD by 2030, growing at a compound annual growth rate (CAGR) of 14.1 per cent[1]. In Canada, cloud adoption is increasing across industries, with businesses investing in cloud infrastructure to enhance cybersecurity, reduce operational costs, and improve data accessibility.

Labour market data indicates that demand for cloud professionals is outpacing the supply of skilled workers. The Information and Communications Technology Council (ICTC) projects that by 2025, Canada will need approximately 100,000 additional cloud and cybersecurity professionals to meet industry needs[2]. This growing demand highlights the need for post-secondary institutions to offer comprehensive cloud computing programs that equip students with industry-relevant skills.

Emerging Technologies in Cloud Computing

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[1] MarketsandMarkets™. (2023). *Cloud computing market by service model (IaaS, PaaS, SaaS), deployment model (public cloud, private cloud, hybrid cloud), organization size, vertical (BFSI, telecommunications, manufacturing, retail & consumer goods) and region – Global forecast to 2028.*
[2] Guay, F. (2024, August 19). *Closing the skills gap in cybersecurity: Why Canada must embrace collaborative education and hands-on learning.* Canadian Cybersecurity Network.

14

Cloud computing continues to evolve with advancements in AI, edge computing, and serverless architectures. AI-driven cloud solutions are enhancing automation and decision-making processes, while edge computing is reducing latency by processing data closer to its source. Serverless computing enables developers to build and deploy applications without managing infrastructure, leading to increased efficiency and cost savings. These technological advancements reinforce the importance of cloud professionals who can design, deploy, and maintain innovative cloud-based solutions.

Industry Trends & Influences

- Shift to Cloud-Native Technologies: Organizations are adopting cloud-native applications to enhance flexibility and cost-efficiency.
- Cybersecurity Concerns: Cloud security is a major priority as data breaches and cyberattacks increase.
- Multi-Cloud and Hybrid Cloud Adoption: Companies are utilizing multiple cloud providers to avoid vendor lock-in.
- AI and Machine Learning Integration: Cloud platforms are embedding AI capabilities for automation and optimization.

Relevant Laws, Policies, Regulations, and Funding

Several laws and policies govern cloud computing in Canada:

- Canada's Digital Charter – Ensures security and privacy compliance in cloud services.
- Personal Information Protection and Electronic Documents Act (PIPEDA) – Regulates how organizations handle personal data.
- General Data Protection Regulation (GDPR) – Relevant for businesses operating internationally.
- ISO 27001 and NIST Cybersecurity Framework – Industry standards for secure cloud computing.
- Federal and Provincial Grants – Programs such as Ontario's Digital Strategy and Innovation Fund support cloud-related education and training.

Regulatory Compliance and Security Considerations

As cloud adoption increases, so does the emphasis on regulatory compliance and data security. Organizations must adhere to standards such as the Personal Information Protection and Electronic Documents Act (PIPEDA), ISO 27001, and the National Institute of Standards and Technology (NIST) cybersecurity framework**Error! Bookmark not defined.**. Compliance with these regulations ensures that businesses can securely store and manage sensitive data in cloud environments. Cloud professionals play a critical role in implementing security

15

measures, conducting risk assessments, and ensuring compliance with legal requirements.

Associations and Affiliations

- Information and Communications Technology Council (ICTC)
- Canadian Cyber Threat Exchange (CCTX)
- Cloud Security Alliance (CSA)
- Amazon Web Services (AWS) Academy
- Microsoft Learn for Educators
- CompTIA (Cloud+, Security+)

Certifications

- AWS Certified Cloud Practitioner
- AWS Solutions Architect Associate
- Microsoft Azure Fundamentals
- CompTIA Cloud+
- Google Cloud Associate Engineer
- Certified Kubernetes Administrator (CKA)
- Linux Professional Institute Certification (LPIC-1)

The proposed program will provide students with the technical expertise and industry certifications needed to succeed in the rapidly expanding cloud computing field.

Employment Projections

The National Occupation Classification (NOC)[3] provides a standardized framework for organizing the labour force into a coherent system. Statistics Canada updated the NOC classifications in 2021 to provide an updated and more specific reflection of the labour market. The use of 5 digits instead of 4 digits for the NOC codes allows for more specificity in the jobs described under that category. However, several sources of labour market information have not yet transformed their database from the 2016 NOC structure to the 2021 NOC structure. Hence the following description identifies the relevant 2021 codes and their 2016 equivalencies below but the discussion in this section primarily relies upon the 2021 framework.

Job titles and descriptions relevant to cloud computing careers were collected from various labour market reports. Based on these titles and descriptions, four key five-digit NOC codes were identified as relevant to the labour market for cloud computing professionals.

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[3] Government of Canada, National Occupational Classification – NOC 2021 Version 1.0, accessed Jan 2025.

These four codes are:

- 20012 (2021) – Computer and information systems managers (e.g., cloud computing manager, IT infrastructure manager, cloud services director) is equivalent to 0213 (2016) – Computer and information systems managers.
- 22220 (2021) – Computer network and web technicians (e.g., cloud support technician, cloud operations analyst, IT support specialist) is equivalent to 2281 (2016) – Computer network technicians.
- 21232 (2021) – Software developers and programmers (e.g., cloud software developer, DevOps engineer, backend cloud developer) is equivalent to 2174 (2016) – Computer programmers and interactive media developers.

The demand for professionals with expertise in cloud computing continues to grow due to the increasing reliance on cloud-based infrastructures across industries. Businesses are investing heavily in cloud migration, cybersecurity, and AI integration, driving the need for skilled workers with cloud expertise. Labour market data from industry reports and job postings indicate strong employment prospects for graduates entering the field, with career opportunities available in cloud architecture, cloud security, DevOps, and IT support services.

Cloud computing professionals are expected to work in diverse sectors, including technology, finance, healthcare, government, and telecommunications. As organizations continue to transition to cloud environments, the need for individuals with relevant certifications (AWS, Microsoft Azure, Google Cloud) and hands-on experience in cloud technologies will remain high. The proposed Cloud and Information Technology Systems Architect program aligns with these industry demands by preparing students with the technical and analytical skills required to succeed in this rapidly evolving job market.

The proposed program will equip students with durable skills that align with demand from industry. The following table depicts a selection of the specialized skills pulled from active job postings in occupations related to professional workers:

In Demand Skills		
NOC Code - Occupation	Specialized Skills	Skills for Success
20012 – Computer and information systems managers 22220 – Computer network and web technicians 21232 – Software developers and programmers	• Computer Science • Project Management • Technical Support • Software Development	• Communication • Problem Solving • Management • Leadership

17

Labour Market Outlook

National Outlook

Occupational Classification: National

The following table displays wages, occupation statistics and employment outlooks for relevant occupations in Canada:

Wages, Occupational Statistics and Employment Outlook (National)					
NOC Code - Occupation	Median Wage	Employment in 2023	Percentage of workers aged 50 and over	Median Retirement Age in 2023	Outlook to 2033[4]
20012 – Computer and information systems managers	$63.31	124,200	32%	62.0	Balance
22220 – Computer network and web technicians	$33.65	40,800	26%	62.0	Balance
21232 – Software developers and programmers	$46.15	155,700	18%	62.0	Balance

Source: Employment and Social Development Canada https://www.jobbank.gc.ca/trend-analysis/search-occupations, Canadian Occupational Projections System https://occupations.esdc.gc.ca, accessed February 2025.

Provincial Outlook

Occupational Classification: Provincial

The following table displays the provincial job prospects over the next three years for the relevant occupations, as well as median wage:

Wages, Occupational Statistics and Employment Outlook (Provincial)			
NOC Code - Occupation	Median Wage	Current Employment	Prospects over the next 3 years[5]
20012 – Computer and information systems managers	$64.10	47,650	Moderate

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[4] Definitions correspond to 2024-2033 national labour market data taken from the Department of Employment and Social Development Canada (ESDC) and are based on the Canadian Occupational Projections System (COPS).
Strong Risk of Shortage: This occupation is expected to face a strong risk of labour shortage over the period of 2024-2033 at the national level.
Moderate Risk of Shortage: This occupation is expected to face a moderate risk of labour shortage over the period of 2024-2033 at the national level.
Balance: Labour demand and labour supply are expected to be broadly in line for this occupation group over the period of 2024-2033 at the national level.
Moderate Surplus: This occupational group is expected to face moderate labour surplus conditions over the period of 2024-2033 at the national level.
Strong Risk of Surplus: This occupation is expected to face a strong risk of labour surplus over the period of 2024-20233 at the national level.
[5] Table three reflects the previous provincial labour market data projections for the period of 2024 to 2026, updated as of December 11th, 2024. The provincial labour market data rankings are defined by the Department of Employment and Social Development Canada (ESDC):
Very good: the short- and medium-term potential for employment for this occupation group is significantly higher than the regional average, compared to other occupations.
Good: the short- and medium-term potential for employment for this occupation group is higher than the regional average, compared to other occupations.

Wages, Occupational Statistics and Employment Outlook (Provincial)			
NOC Code - Occupation	Median Wage	Current Employment	Prospects over the next 3 years[5]
22220 – Computer network and web technicians	$34.62	19,100	Moderate
21232 – Software developers and programmers	$46.77	68,650	Moderate

Source: Employment and Social Development Canada https://www.jobbank.gc.ca/trend-analysis/search-occupations, accessed February 2025.

The following figure displays the provincial job outlook rating (2023-2027) [6] for the relevant occupations, as well as annual median income.

20012 – Computer and information systems managers

Job outlook: **Moderate** | Median wage / salary: **$64.10** | Top location: **Toronto (63%)**

22220 – Computer network and web technicians

Job outlook: **Moderate** | Median wage / salary: **$34.62** | Top location: **Toronto (52%)**

21232 – Software developers and programmers

Job outlook: **Moderate** | Median wage / salary: **$46.77** | Top location: **Toronto (61%)**

Source: Ontario Job Profiles https://www.services.labour.gov.on.ca/labourmarket, accessed February 2025.

The median hourly wage rate for all three occupations is above the most recent median annual income in Ontario ($42,700)[7].

Moderate: the short- and medium-term potential for employment for this occupation group is comparable to the regional average, compared to other occupations.
Limited: the short- and medium-term potential for employment for this occupation group is below the regional average, compared to other occupations.
Very limited: the short- and medium-term potential for employment for this occupation group is significantly lower than the regional average, compared to other occupations over the next 3 years.
[6] Outlook rankings are defined by the Ontario Ministry of Labour, Immigration, Training and Skills Development:
Very good: This situation is most favourable to job seekers since it indicates moderate recent and future employer demand for workers. Relative to other occupations, these occupations tended to have very high numbers of online job postings relative to the size of the occupation, very low unemployment rates in the recent past, very high projected employment growth rates and very high projected rates of attrition due to retirement.
Good: This situation is more favourable to job seekers since it indicated moderate recent and future employer demand for workers. Relative to other occupations, these occupations tended to have high numbers of online job postings relative to the size of the occupation, low unemployment rates in the recent past, high projected employment growth rates and high projected rates of attrition due to retirement.
Moderate: This situation is somewhat favorable to job seekers since it indicates moderate recent and future employer for workers. Relative to other occupations, these occupations tended to have moderate number of online job postings relative to the size of the occupation, moderate unemployment rates in the recent past, moderate projected employment growth rates and moderate projected rates of attrition due to retirement.
[7] Statistics Canada, Employee wages by industry annual, accessed January 2025.

19

The following table presents summary job profile statistics provided by the Government of Ontario for the relevant occupations:

Provincial Summary Job Profile Statistics			
NOC Code - Occupation	Males	Females	Unemployment Rate
20012 – Computer and information systems managers	73%	27%	2.2%
22220 – Computer network and web technicians	83%	17%	4.7%
21232 – Software developers and programmers	80%	20%	4.1%

Source: Ontario Job Profiles https://www.services.labour.gov.on.ca/labourmarket, accessed February 2025.

Unemployment rates for all three occupations are lower than the 2023 average provincial unemployment rate (seven per cent[8]).

The following table displays the education level of employees for relevant occupations in Ontario:

Educational Attainment			
Education Level	20012 – Computer and information systems managers	22220 – Computer network and web technicians	21232 – Software developers and programmers
No certificate, diploma or degree:	1%	2%	0%
Secondary (high) school diploma or equivalency certificate	9%	17%	9%
Apprenticeship or trades certificate or diploma	1%	2%	0%
College, CEGEP or other non-university certificate or diploma	20%	40%	10%
Bachelor's degree	42%	27%	51%
Degree in medicine, dentistry, veterinary medicine or optometry	0%	0%	0%
Master's degree	21%	8%	22%
Earned doctorate	2%	0%	2%
Other	6%	5%	5%

Source: Ontario Job Profiles https://www.services.labour.gov.on.ca/labourmarket, accessed February 2025.
Percentages may not sum to 100 due to rounding.

The following table presents provincial employment opportunities for each relevant occupation. Within each column, the percentages indicate the

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[8] Statistics Canada, Unemployment rate, participation rate and employment rate by sex, annual, accessed March 2025.

distribution of all individuals employed in the corresponding occupation across the select census divisions:

Employment Share by Census Division				
Census Division	All Occupations	20012– Computer and information systems managers	22220 – Computer network and web technicians	21232 - Software developers and programmers
Durham	**5%**	6%	5%	3%
Toronto	**21%**	25%	20%	28%
Peel	**10%**	13%	13%	13%
York	**9%**	12%	10%	13%
Peterborough	**1%**	<1%	1%	<1%
Northumberland	**1%**	<1%	<1%	<1%
Kawartha Lakes	**1%**	<1%	<1%	<1%

Source: Ontario Job Profiles https://www.services.labour.gov.on.ca/labourmarket, accessed February 2025.

The following table presents the combined number of current and projected jobs that are expected to be created in Ontario and select census divisions across all three relevant occupations:

Occupation Summary (Ontario and Select Census Divisions) – 2024 & 2029					
Region	2024 Jobs	2029 Jobs	Change	% Change	Average Hourly Wages (2023)
Ontario	**192,360**	**207,637**	**15,277**	**8%**	**$49.36**
Durham	8,442	9,470	1,028	12%	$51.00
Toronto	53,588	56,762	3,174	6%	$51.60
Peel	23,849	25,564	1,715	7%	$51.43
York	20,647	22,377	1,730	8%	$51.66
Peterborough	593	595	2	0%	$48.06
Northumberland	225	226	1	0%	$49.16
Kawartha Lakes	193	192	-1	-1%	$49.30

Source: Labour Force Survey, Lightcast Analyst 2024.3, accessed March 2025.

Local Outlook

Occupational Classifications: Region of Durham
The following table presents the number of jobs and hourly wages for all relevant occupations within the Durham census division. Job counts are presented for 2024, in addition to a projection of the number of jobs in 2029:

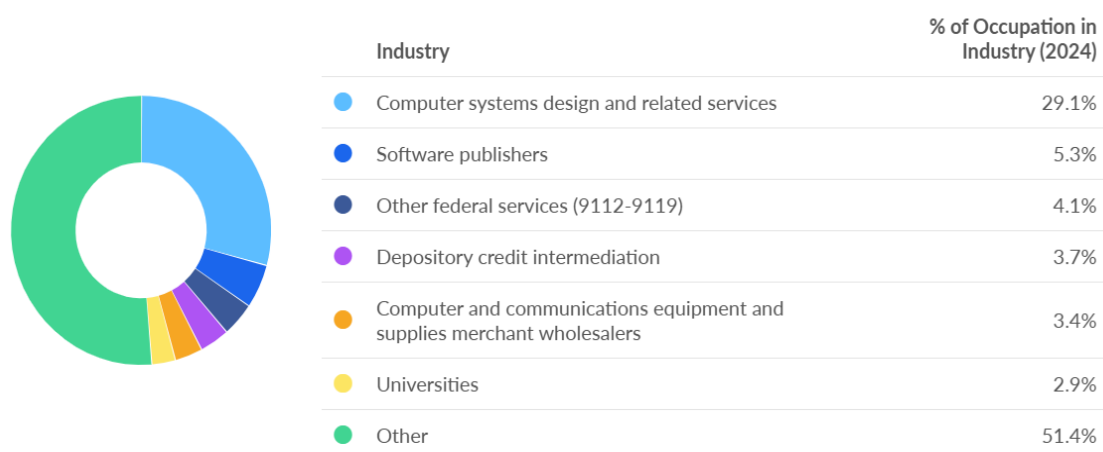| Durham Region Employment Outlook - 2024 & 2029					
NOC Code - Occupation	2024 Jobs	2029 Jobs	Change	% Change	Average Hourly Wages (2023)
20012 – Computer and information systems managers	2,586	3,008	422	16%	$71.67
22220 – Computer network and web technicians	892	901	9	1%	$37.06
21232 – Software developers and programmers	2,690	2,990	300	11%	$50.72
Total	8,442	9,471	1,029	12%	$51.00

Source: Labour Force Survey, Lightcast Analyst 2024.3, accessed March 2025.

The following table presents information for the self-employment in selected occupations within the Durham census division:

Durham Region Self-Employment Outlook - 2024 & 2029				
NOC Code - Occupation	2024 Jobs	2029 Jobs	Change	% Change
20012 – Computer and information systems managers	45	49	4	9%
22220 – Computer network and web technicians	<10	<10	N/A	N/A
21232 – Software developers and programmers	360	398	38	11%
Total	430	469	39	9%

Source: Labour Force Survey, Lightcast Analyst 2024.3, accessed January 2025.

The occupations reviewed above are distributed across the economy in a variety of different industries. The figure below illustrates the wide distribution of high affinity occupations in Ontario:

Industry	% of Occupation in Industry (2024)
Computer systems design and related services	29.1%
Software publishers	5.3%
Other federal services (9112-9119)	4.1%
Depository credit intermediation	3.7%
Computer and communications equipment and supplies merchant wholesalers	3.4%
Universities	2.9%
Other	51.4%

Source: Labour Force Survey, Lightcast Analyst 2024.3, accessed February 2025.

The figure above illustrates the highest concentration of the occupations related to the proposed Cloud and Information Technology Systems program is in *Computer systems design and related services;* however, a large percentage of

22

occupations (51.4 per cent) are captured in *Other* industries, which indicates a substantial breadth of occupation options.

The following table displays the sectors in which the relevant occupations are employed:

20012 – Computer and information systems managers		22220 – Computer network and web technicians	
40%	Professional, Scientific, & Technical Services	**26%**	Professional, Scientific & Technical Services
12%	Finance & Insurance	**12%**	Information & Cultural Industries
9%	Information & Cultural Industries	**12%**	Public Administration
9%	Public Administration	**9%**	Finance & Insurance
5%	Manufacturing	**8%**	Educational Services
24%	All other industries	**33%**	All other industries

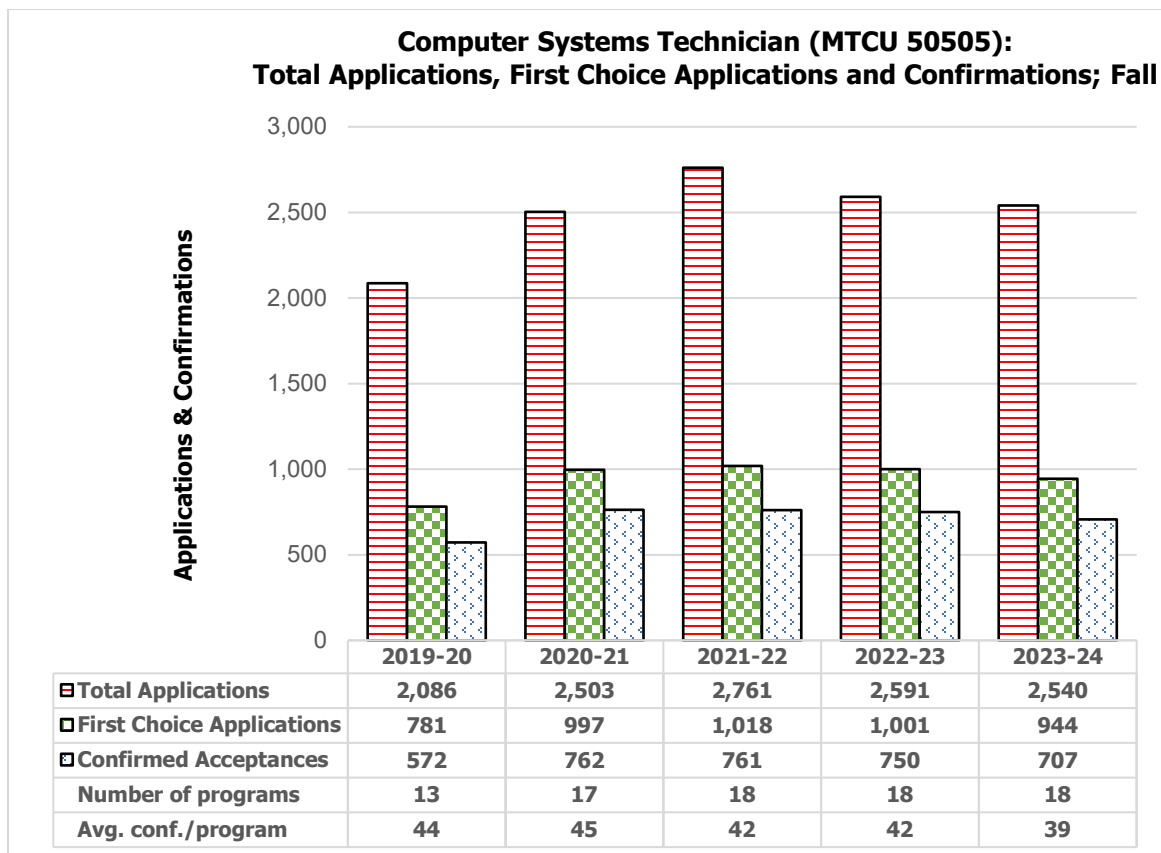| 21232 – Software developers and programmers	
55%	Professional, Scientific & Technical Services
12%	Information & Cultural Industries
11%	Finance & Insurance
5%	Public Administration
4%	Manufacturing
14%	All other industries

Source: Ontario Job Profiles https://www.services.labour.gov.on.ca/labourmarket, accessed February 2025.

All three of the occupations are prevalent in the professional, scientific and technical services industry.

6. Student Interest

6.1 Applications and Acceptances

The following figure displays system-wide domestic applications, first choice applications and confirmed acceptances for the Fall intake of the Computer Systems Technician program in Ontario (MTCU 50505):

Computer Systems Technician (MTCU 50505): Total Applications, First Choice Applications and Confirmations; Fall

	2019-20	2020-21	2021-22	2022-23	2023-24
Total Applications	2,086	2,503	2,761	2,591	2,540
First Choice Applications	781	997	1,018	1,001	944
Confirmed Acceptances	572	762	761	750	707
Number of programs	13	17	18	18	18
Avg. conf./program	44	45	42	42	39

Source: OCAS Data Warehouse, accessed February 2025.
Note: The number of programs reflects the number of programs with confirmed acceptances.

Average year-over-year growth is presented below:

- The average growth[9] between 2019 and 2023 for total applications was five point five per cent.
- The average growth between 2019 and 2023 for first choice applications was five point six two per cent.
- The average growth between 2019 and 2023 for confirmed acceptances was six point five per cent.

The following table presents the total applications, first choice applications, and confirmed acceptances to the Fall intake of the Computer Systems Technician program (MTCU 50505) across the CAAT system:

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[9] Average Growth refers to the average change each year.

Domestic Applicant Interest in Fall Computer Systems Technician (MTCU 50505) Programs at Ontario CAATs							
College	**Measure**	**2019-20**	**2020-21**	**2021-22**	**2022-23**	**2023-24**	**Rolling Avg. Change**
CAAT	**Total Applications**	2,086	2,503	2,761	2,591	2,540	6%
	First Choice Applications	781	997	1,018	1,001	944	6%
	Confirmations	572	762	761	750	707	6%

There has been an increased level of domestic applications and confirmations for Computer Systems Technician programs at CAATs over the past five years. The following figure displays system-wide domestic applications, first choice applications and confirmed acceptances for the Winter intake of the Computer Systems Technician program in Ontario (MTCU 50505):

Computer Systems Technician (MTCU 50505):
Total Applications, First Choice Applications and Confirmations; Winter

	2019-20	2020-21	2021-22	2022-23	2023-24
Total Applications	922	1,232	1,309	1,203	1,213
First Choice Applications	397	452	453	449	450
Confirmed Acceptances	269	329	343	363	360
Number of programs	10	15	16	16	16
Avg. conf./program	27	22	21	23	23

Source: OCAS Data Warehouse, accessed February 2025.
Note: The number of programs reflects the number of programs with confirmed acceptances.
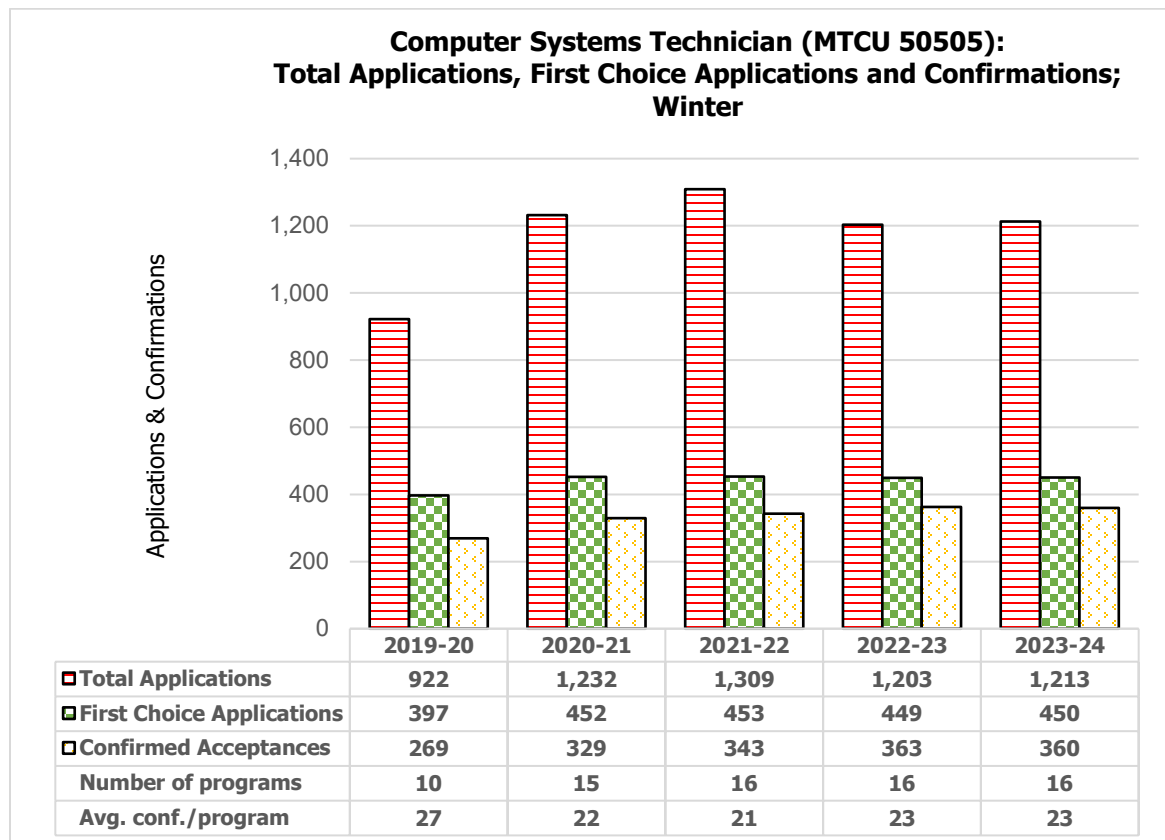
Average year-over-year growth is presented below:
- The average growth[10] between 2019 and 2023 for total applications was eight point two per cent.

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[10] Average Growth refers to the average change each year.

- The average growth between 2019 and 2023 for first choice applications was three point four per cent.
- The average growth between 2019 and 2023 for confirmed acceptances was seven point nine per cent.

The following table presents the total applications, first choice applications, and confirmed acceptances for the Winter intake of the Computer Systems Technician program (MTCU 50505) across the CAAT system:

Domestic Applicant Interest in Winter Computer Systems Technician (MTCU 50505) Programs at Ontario CAATs							
College	Measure	2019-20	2020-21	2021-22	2022-23	2023-24	Rolling Avg. Change
CAAT	Total Applications	922	1,232	1,309	1,203	1,213	8%
	First Choice Applications	397	452	453	449	450	3%
	Confirmations	269	329	343	363	360	8%

Source: OCAS Data Warehouse, accessed: February 2025.

Overall, there has been an increase in domestic applications and confirmations for the Winter intake of the Computer Systems Technician programs.

The following figure displays system-wide domestic applications, first choice applications and confirmed acceptances for the Spring intake of the Computer Systems Technician program in Ontario (MTCU 50505):

Computer Systems Technician (MTCU 50505):
Total Applications, First Choice Applications and Confirmations;
Spring
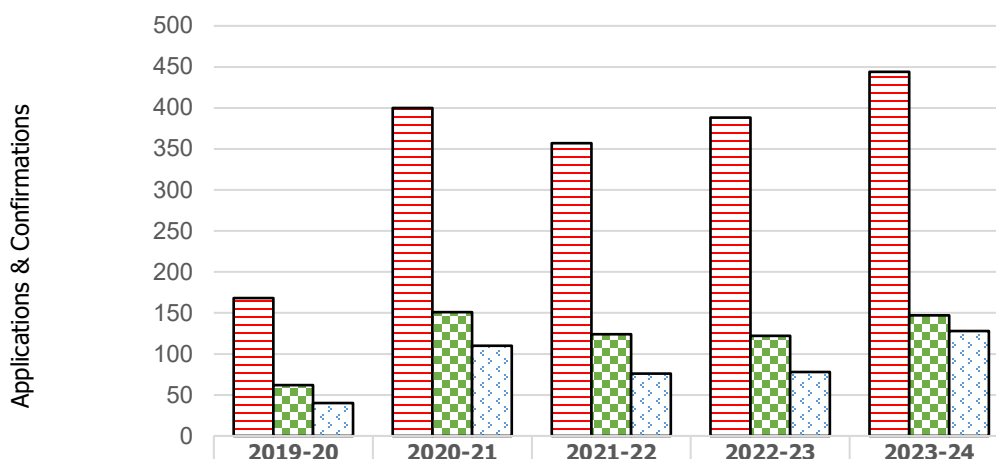
	2019-20	2020-21	2021-22	2022-23	2023-24
Total Applications	168	400	357	388	444
First Choice Applications	62	151	124	122	147
Confirmed Acceptances	40	110	76	78	128
Number of programs	4	8	6	7	9
Avg. conf./program	10	14	13	11	14

Source: OCAS Data Warehouse, accessed: March 2025.
Note: The number of programs reflects the number of programs with confirmed acceptances.

Average year-over-year growth is presented below:
- The average growth[11] between 2019 and 2023 for total applications was 37.6 per cent.
- The average growth between 2019 and 2023 for first choice applications was 36.1 per cent.
- The average growth between 2019 and 2023 for confirmed acceptances was 52.7 per cent.

The following table presents the total applications, first choice applications, and confirmed acceptances for the Spring intake of the Computer Systems Technician diploma program (MTCU 50505) across the CAAT system:

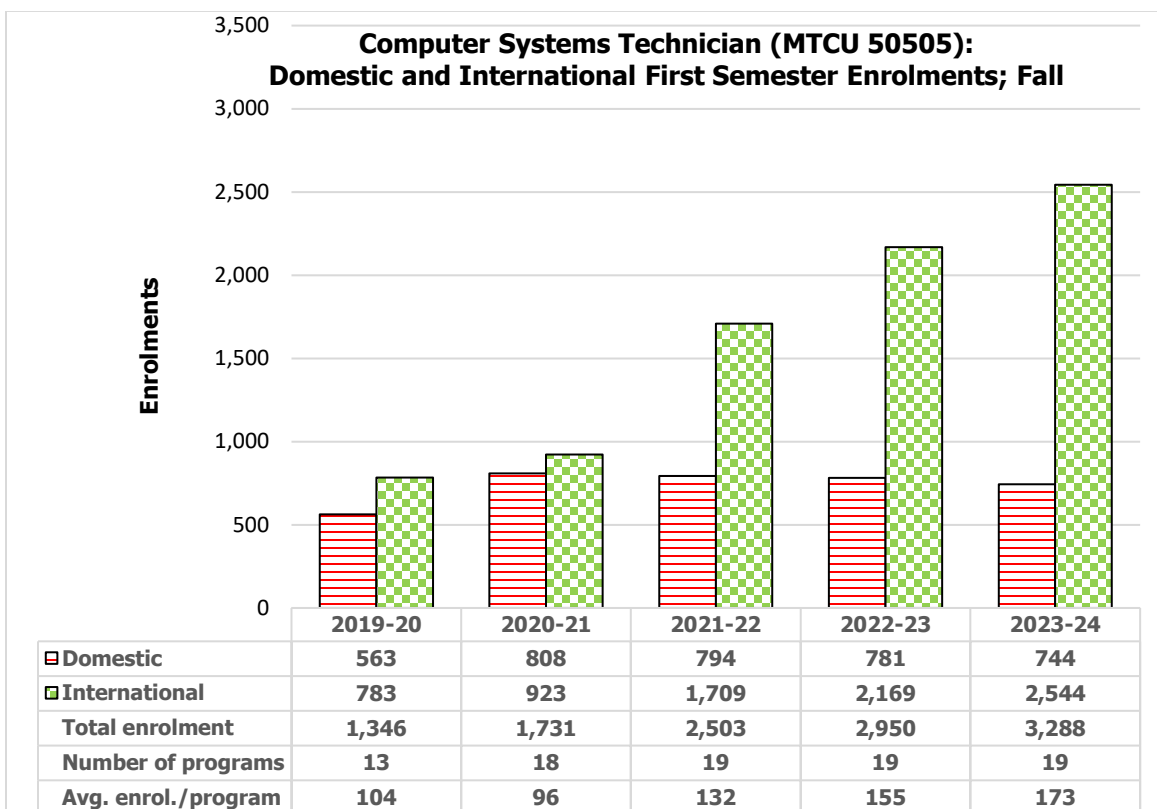| Domestic Applicant Interest in Spring Computer System Technician (MTCU 50505) Programs at Ontario CAATs							
College	Measure	2019-20	2020-21	2021-22	2022-23	2023-24	Rolling Avg. Change
CAAT	Total Applications	168	400	357	388	444	38%
	First Choice Applications	62	151	124	122	147	36%

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[11] Average Growth refers to the average change each year.

Domestic Applicant Interest in Spring Computer System Technician (MTCU 50505) Programs at Ontario CAATs							
College	Measure	2019-20	2020-21	2021-22	2022-23	2023-24	Rolling Avg. Change
	Confirmations	40	110	76	78	128	53%

Source: OCAS Data Warehouse accessed: February 2025.

6.2 Enrolment

The following figure displays system-wide first semester enrolments, domestic and international for the Fall intake for Computer Systems Technician programs at Ontario CAATs (MTCU 50505):

Computer Systems Technician (MTCU 50505): Domestic and International First Semester Enrolments; Fall

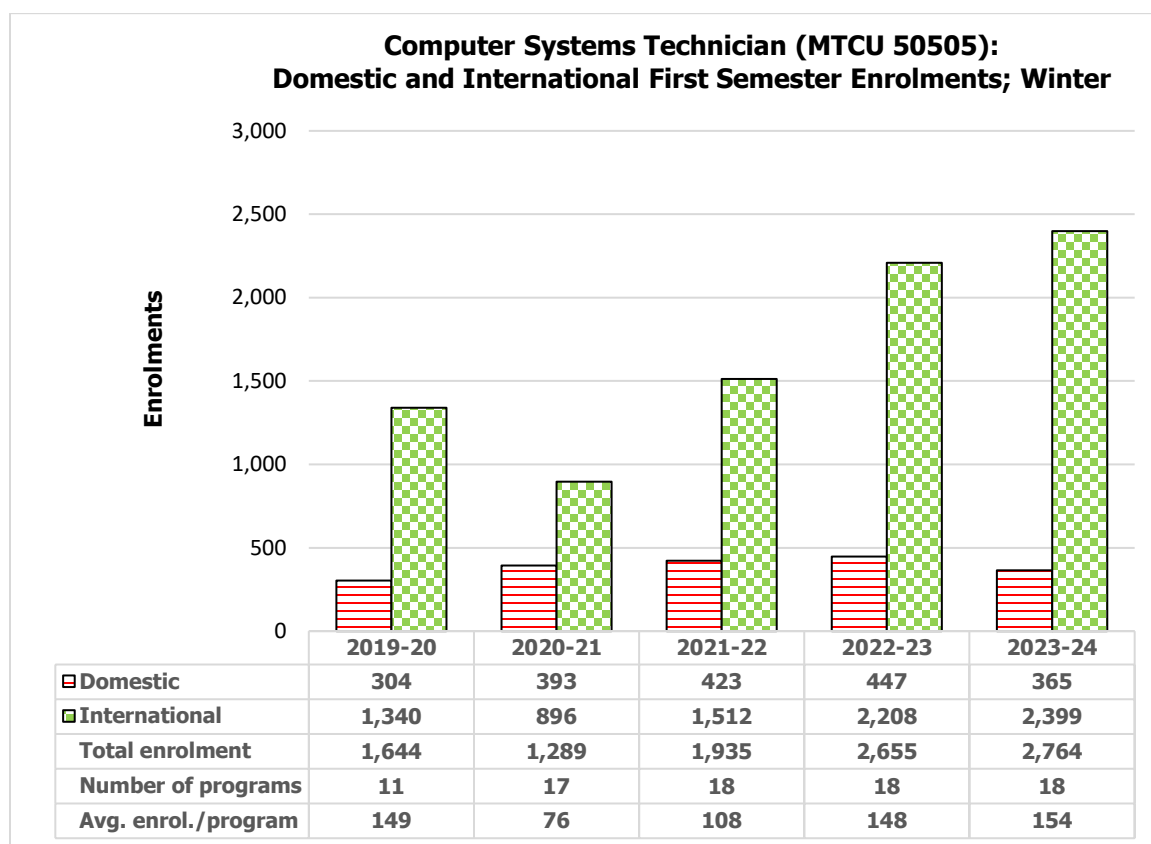|	2019-20	2020-21	2021-22	2022-23	2023-24
Domestic	563	808	794	781	744
International	783	923	1,709	2,169	2,544
Total enrolment	1,346	1,731	2,503	2,950	3,288
Number of programs	13	18	19	19	19
Avg. enrol./program	104	96	132	155	173

Source: OCAS Data Warehouse, accessed: March 2025

Average year-over-year growth is presented below:

- The average growth[12] between 2019 and 2023 for domestic enrolments was eight point nine per cent.
- The average growth between 2019 and 2023 for international enrolments was 36.8 percent.
- The average growth between 2019 and 2023 for total enrolments was 25.6 per cent.

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[12] Average Growth refers to the average change each year.

In addition to the Computer Systems Technician programs (MTCU 50505), fall enrolments for Computer Networking and Technical Support programs (MTCU 50511) have significantly decreased and have had no enrolments since the 2020-21 academic year.

The following figure displays system-wide first year enrolments, domestic and international for the Winter intake for Computer Systems Technician programs at Ontario CAATs (MTCU 50505):

Computer Systems Technician (MTCU 50505):
Domestic and International First Semester Enrolments; Winter

	2019-20	2020-21	2021-22	2022-23	2023-24
Domestic	304	393	423	447	365
International	1,340	896	1,512	2,208	2,399
Total enrolment	1,644	1,289	1,935	2,655	2,764
Number of programs	11	17	18	18	18
Avg. enrol./program	149	76	108	148	154

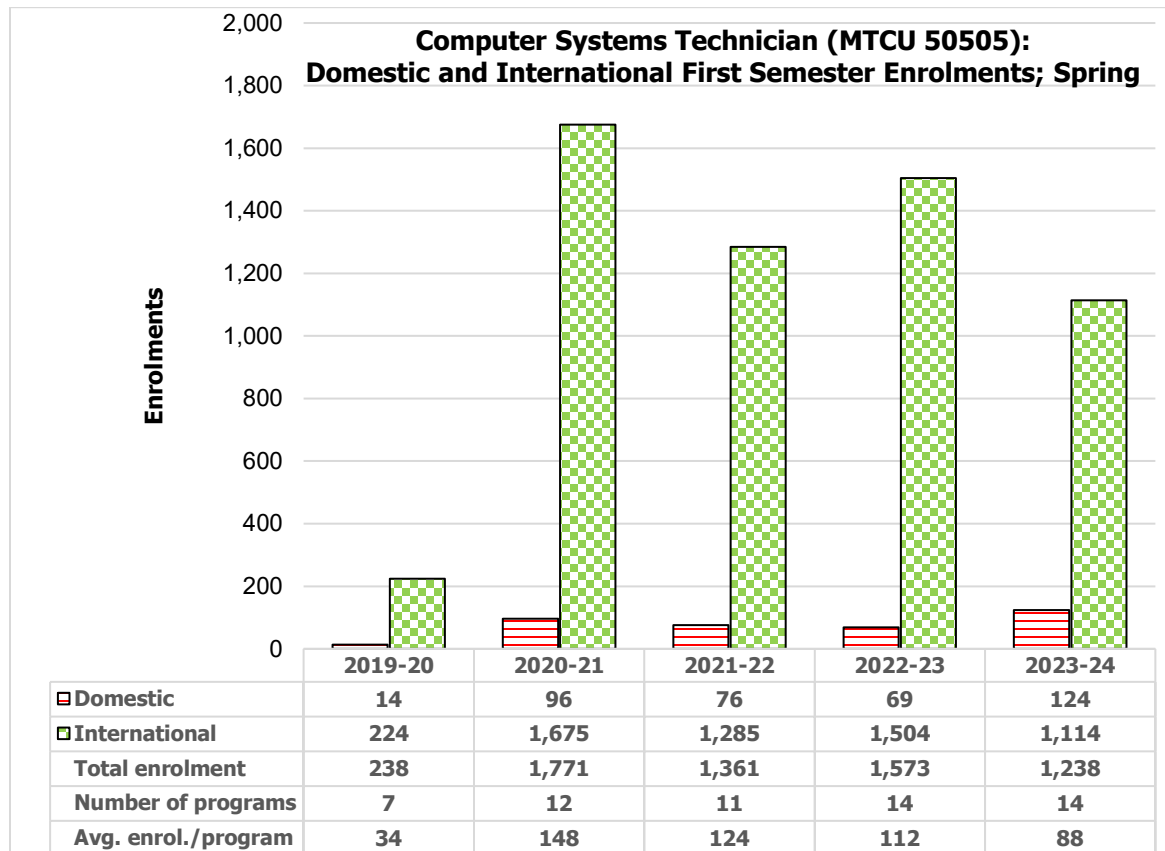*Source: OCAS Data Warehouse accessed: March 2025.*

Average year-over-year growth is presented below:
- The average growth[13] between 2019 and 2023 for domestic enrolments was six point one per cent.
- The average growth between 2019 and 2023 for international enrolments was 22.6 per cent.
- The average growth between 2019 and 2023 for total enrolments was 17.5 per cent.

Winter enrolments for Computer Networking and Technical Support programs (MTCU 50511) have significantly decreased and have had no enrolments since the 2020-21 academic year.

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[13] Average Growth refers to the average change each year.

29

The following figure displays system-wide first year enrolments, domestic and international for the Spring intake of Computer Systems Technician programs at Ontario CAATs (MTCU 50505):

Computer Systems Technician (MTCU 50505): Domestic and International First Semester Enrolments; Spring

	2019-20	2020-21	2021-22	2022-23	2023-24
Domestic	14	96	76	69	124
International	224	1,675	1,285	1,504	1,114
Total enrolment	238	1,771	1,361	1,573	1,238
Number of programs	7	12	11	14	14
Avg. enrol./program	34	148	124	112	88

Source: OCAS Data Warehouse accessed: March 2025.

Average year-over-year growth is presented below:
- The average growth[14] between 2019 and 2023 for domestic enrolments was 158.8 per cent.
- The average growth between 2019 and 2023 for international enrolments was 153.9 per cent.
- The average growth between 2019 and 2023 for total enrolments was 153.8 per cent.

Spring enrolments for Computer Networking and Technical Support programs (MTCU 50511) have significantly decreased and have had no enrolments since the 2019-20 academic year.

The following table presents five years of domestic and international Fall, Winter, and Spring enrolments for Computer Systems Technician programs at Ontario CAATs (MTCU 50505):

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[14] Average Growth refers to the average change each year.

Computer Systems Technician (MTCU 50505) First Semester Enrolment – Domestic							
College	Term	2019-20	2020-21	2021-22	2022-23	2023-24	Rolling Avg. Change
CAAT	Fall	563	808	794	781	744	9%
	Winter	304	393	423	447	365	6%
	Spring	14	96	76	69	124	159%

Source: OCAS Data Warehouse accessed March 2025.

Computer Systems Technician (MTCU 50505) First Semester Enrolment – International							
College	Term	2019-20	2020-21	2021-22	2022-23	2023-24	Rolling Avg. Change
CAAT	Fall	783	923	1,709	2,169	2,544	37%
	Winter	1,340	896	1,512	2,208	2,399	23%
	Spring	224	1,675	1,285	1,504	1,114	154%

Source: OCAS Data Warehouse accessed March 2025.

Overall, enrolment in Computer Systems Technician programs has been growing over the past five years, with both domestic and international students.

The table below displays the catchment loss from the Durham catchment to CAATs offering the same program over the last five years.

Computer Systems Technician (MTCU 50505) First Semester Enrolment – Domestic Catchment Loss							
College	Term	2019-20	2020-21	2021-22	2022-23	2023-24	Rolling Avg. Change
CAAT	Fall	57	53	44	54	66	5%
	Winter	23	17	29	26	16	-1%
	Spring	2	1	2	1	2	25%

Source: OCAS Data Warehouse accessed March 2025.

6.3 Program Performance

The following table presents aggregate results from the Graduate Outcomes and Employer Survey[15] (GOES) for Computer Networking and Technical Support programs offered at CAATs. The GOES survey captures the satisfaction of Ontario College graduates with their college education and employment outcomes following graduation. It assesses perceptions on how well the college experience has prepared them to meet their goals after graduation as well as the needs of their employers. These results will be further explored in the subsequent sections.

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[15] The Graduate Outcome and Employer Satisfaction Survey replaced the prior KPI Graduate and Employer Survey. This survey is conducted by all CAAT in order to measure 4 KPI's Graduate Employment Rate, Graduate Satisfaction Rate, Employer Satisfaction Rate, Graduation Rate.

System Graduate and Employment GOES Results					
	2018-19	**2019-20**	**2020-21**	**2021-22**	**2022-23**
Graduate Satisfaction **Computer Systems Technician (MTCU 50505)**					
CAAT	77.4% (168)	68.3% (139)	75.8% (95)	65.3% (190)	67.5% (212)
GOES Graduation Rate (domestic) **Computer Systems Technician (MTCU 50505)**					
CAAT	56.4% (759)	64.1% (779)	61.2% (802)	65.3% (827)	58.6% (874)
Graduate Employment Rate **Computer Systems Technician (MTCU 50505)**					
CAAT	84.0% (150)	80.2% (111)	64.4% (73)	80.7% (119)	75.8% (149)
Graduate Related Employment Rate **Computer Systems Technician (MTCU 50505)**					
CAAT	72.0% (443)	59.9% (469)	60.8% (406)	62.4% (319)	67.1% (322)

https://www.ontario.ca/page/college-graduation-satisfaction-and-job-rates

6.4 Student Experience

In 2021-22 the Ontario Colleges Student Experience Survey (SES) was administered by the Ontario College Application Service (OCAS) to 22 CAATs[16]. The survey assesses the student experience according to three key capstone questions. These questions focus on the program specific knowledge and skills, teaching and learning and work integrated learning.

Student Experience – Computer Systems Technician (MTCU 50505)									
	Knowledge + Skills			Teaching + Learning			Work Integrated Learning		
College	2021-22	2022-23	2023-24	2021-22	2022-23	2023-24	2021-22	2022-23	2023-24
CAAT	88.3% (935)	92.4% (1,882)	89.5% (1,674)	81.9% (1,012)	87.7% (1,935)	85.7% (1,740)	91.7% (242)	94.7% (585)	90.7% (537)

7. Analysis of Competition

Currently, 21 CAATs offer Computer Systems Technician OCD programs in Ontario under MTCU 50505, varying in emphasis from networking and cybersecurity to cloud administration. These programs typically prepare students for entry-level cloud-related roles in architecture, DevOps, and system administration.

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[16] The Student Experience Survey is a voluntary and confidential survey of Full-Time DC Students administered by the Ontario College Application Service during the Winter semester. 22 of the publicly funded CAATs participate in the Student Experience Survey.

However, none of the CAATs currently offer cloud computing diploma programs specifically (MTCU 50511). The proposed Cloud and Information Technology Systems OCD provides students with hands-on experience in cloud security, virtualization, application development, and IT project management. The program's integration of industry-recognized certifications such as AWS Certified Cloud Practitioner, AWS Solutions Architect Associate, and Microsoft Azure Fundamentals further enhances graduate employability.

8. **Target Market**

The target market for the proposed program includes domestic and international students possessing an Ontario Secondary School Diploma, equivalent, or mature student status. Grade 12 English will be required, and it is recommended that students have a Grade 12 math or computer science credit.

9. Operating Revenue and Expenses

The following tables summarize the net contribution for the proposed Cloud and Information Technology Systems OCD program.

Student Enrolment (YR 1)	2026-27 Projection	2027-28 Projection	2028-29 Projection	2029-30 Projection	2030-31 Projection
Projected enrolment (domestic)	20	30	35	40	45
Projected enrolment (international)	15	20	25	30	45
Total	**35**	**50**	**60**	**70**	**90**

Net Contribution	2026-27 Projection	2027-28 Projection	2028-29 Projection	2029-30 Projection	2030-31 Projection
Total Direct Program Expenses	147,855	271,678	382,673	394,153	598,645
Total Revenue for Program	334,958	765,840	998,350	1,207,938	1,751,615
Net Contribution $	187,103	494,162	615,677	813,785	1,152,970
Net Accumulated Contribution / (Deficit)	187,103	681,265	1,296,942	2,110,727	3,263,697
Net Contribution - % of Gross Revenue	55.9%	64.5%	61.7%	67.4%	65.8%
Target Net Contribution	**n/a**	**Breakeven**	**35.0%**	**35.0%**	**35.0%**
Capital Requirement	0	0	0	0	0

34

Agenda Page 93

Revenue	2026-27 Projection	2027-28 Projection	2028-29 Projection	2029-30 Projection	2030-31 Projection
Tuition Fees per academic year (domestic)	2,722	2,722	2,722	2,722	2,722
Set-Aside Fee Removed (domestic)	(272)	(272)	(272)	(272)	(272)
Tuition Fee realized by college (domestic)	2,450	2,450	2,450	2,450	2,450
Tuition Fees per academic year (international)	12,587	12,964	13,353	13,754	14,166
Set-Aside Fee Removed (international)	(230)	(235)	(241)	(247)	(253)
International Student Recovery	(750)	(750)	(750)	(750)	(750)
International Commission Recruitment	(1,378)	(1,412)	(1,447)	(1,483)	(1,520)
Tuition Fee realized by college (international)	12,951	13,289	13,637	13,996	14,365
Total Tuition Fees (domestic)	48,997	115,142	148,216	170,876	193,537
Total Tuition Fees (international)	194,268	435,220	572,764	717,283	1,195,891
Other Revenue (Contract Training)	-	-	-	-	-

35

Agenda Page 94

Revenue	2026-27 Projection	2027-28 Projection	2028-29 Projection	2029-30 Projection	2030-31 Projection
Total Other Revenue	-	-	-	-	-
Program Wtd Funding Unit (domestic only)	1.11	1.11	1.11	1.11	1.11
Grant - MTCU Operating (Assume $4149/wfu)	91,963	215,478	277,371	319,779	362,187
Total Revenue (domestic)	**140,690**	**330,621**	**425,220**	**490,655**	**555,724**
Total Revenue (international)	**194,268**	**435,220**	**572,764**	**717,283**	**1,195,891**

Expenditures	2026-27 Projection	2027-28 Projection	2028-29 Projection	2029-30 Projection	2030-31 Projection
Salaries - Faculty (FT)	85,000	87,550	175,177	180,432	185,845
Salaries - Co-ordinator Allowance	0	0	0	0	0
Salaries - PT Teaching	33,600	136,214	135,594	139,662	307,824
Salaries - PL Teaching	0	0	0	0	0
Salaries - Sessional Teaching	0	0	0	0	0
Contract Teaching	0	0	0	0	0
Total Teaching Salaries	**118,600**	**223,764**	**310,771**	**320,094**	**493,669**
Support Staff	0	0	0	0	0

36

Agenda Page 95

Expenditures	2026-27 Projection	2027-28 Projection	2028-29 Projection	2029-30 Projection	2030-31 Projection
Total Academic Support Costs	**0**	**0**	**0**	**0**	**0**
Benefits - Faculty - FT 27.5%	23,375	24,076	48,174	49,619	51,107
Benefits - Faculty - PT 17.5%	5,880	23,838	23,729	24,441	53,869
Benefits - SS (FT) 31.5%	0	0	0	0	0
Total Employee Benefits	**29,255**	**47,914**	**71,903**	**74,060**	**104,976**
Total Labour	**147,855**	**271,678**	**382,673**	**394,153**	**598,645**
Instructional Supplies	0	0	0	0	0
Instructional Other Costs	0	0	0	0	0
Field Work	0	0	0	0	0
Membership & Dues	0	0	0	0	0
Professional Development	0	0	0	0	0
Travel/accommodation/ meals	0	0	0	0	0
Promotion/Public relations	0	0	0	0	0
Maintenance-Equipment	0	0	0	0	0

37

Expenditures	2026-27 Projection	2027-28 Projection	2028-29 Projection	2029-30 Projection	2030-31 Projection
Telecommunications	0	0	0	0	0
Software Costs	0	0	0	0	0
Contracted Services	0	0	0	0	0
Rental	0	0	0	0	0
Total Other Expenditure	**0**	**0**	**0**	**0**	**0**

Report Number: BOG-2025-45

To: Board of Governors

From: Dr. Jean Choi, Vice President, Academic and Students

Date of Report: April 23, 2025

Date of Meeting: May 7, 2025

Subject: New Program Development: Geographic Information System for Data Analytics

1.   Purpose

To seek approval from the Board of Governors for the following post-secondary program of instruction for Fall 2026 intake:

Geographic Information Systems (GIS) for Data Analytics
- Credential: Ontario College Graduate Certificate (OCGC)
- Duration: Two semesters
- Faculty: Business and Information Technology

2.   Recommendation

It is recommended to the Durham College Board of Governors:

That in accordance with Report BOG-2025-45, the proposed Geographic Information Systems for Data Analytics Ontario College Graduate Certificate program be approved.

3.   Background

Durham College's (DC) proposed Geographic Information Systems (GIS) for Data Analytics OCGC builds the knowledge and skills essential for students to create, manage, and analyze spatial and non-spatial data through visualizations and maps, and subsequently provide accurate and effective information to stakeholders in support of strategic decision-making. The proposed program includes a capstone course in the third semester in which students design, develop, and implement a GIS project in response to a real-world challenge. This applied project allows students to apply the knowledge and skills developed in courses across the program to implement a proof-of-concept or solution to

demonstrate the value of leveraging key data for effective and efficient decision-making.

The field of spatial data analytics is a new and growing industry with a demonstrated high demand for skilled professionals. Graduates are positioned to apply these skills to fields like engineering, social sciences, health, and more. Job opportunities include government agencies, utility companies, defense organizations, mines, First Nations, municipalities, healthcare, forestry, planning, engineering, and business. The proposed program also covers geomatics technologies like spatial modeling and remote sensing from drones and satellites, which are useful in sectors like forestry, environment, public health, agriculture, and mining.

As per the Ministry of Training, Colleges and Universities' Minister's Binding Policy Directive 3.0, Programs, Framework for Programs of Instruction, the Board of Governors is responsible for approving programs of instruction the college will offer.

It is the role of the Durham College Board of Governors to ensure that programs of instruction are developed and implemented in conformity with the Credentials Framework and are consistent with provincial program standards where they exist. It is also the responsibility of the Board to ensure that all new and modified post-secondary programs of instruction lead to one of the following credentials: Durham College Certificate, Ontario College Certificate, Ontario College Diploma, Ontario College Advanced Diploma, Ontario College Graduate Certificate or Baccalaureate Degree.

We confirm that Durham College is in compliance with all Minister's Binding Policy Directives as noted above, for this new program of instruction.

4.   Discussion/Options

Based on the results of the environmental scan, it is expected that the proposed GIS for Data Analytics OCGC will be a beneficial addition to DC's program offerings for several reasons.
- Skills taught in the proposed GIS program are widely applicable across several occupations and sectors enhancing graduates' employability.
- Only one GIS program exists within the East and Central regions indicating a need for the program in the region.
- The Provincial job outlook is positive for all associated occupations and endorsed by the ad-hoc Program Advisory Committee.
- Program performance rating for student experience, graduate satisfaction, graduate rate, employment rates and related employment rates are moderate to high.

5.   Financial/Human Resource Implications

The proposed OCGC will submit a Request for Approval for Funding to the Ministry of Colleges, Universities, Research Excellence and Security (MCURES) for a base tuition of $5,758.00.

The proposed new program is projected to exceed the targeted contribution in Year One.

6.   Implications for the Joint Campus Master Plan

There are no implications for the joint campus master plan.

7.   Implications for Ontario Tech University

There are no anticipated implications for Ontario Tech University.

8.   Relationship to the Strategic Plan/Business Plan

The proposed program aligns with of the Academic Plan, and the Our Students pillar of the Strategic, and Business Plans.

The proposed GIS for Data Analytics OGCC is carefully designed to align with the strategic objectives outlined in the Academic, Strategic, and Business Plans, ensuring it not only meets but advances the college's mission and goals.

8.1 Academic Plan

Goal 1: Ensure Exceptional Quality in our Academic Programs

> The curriculum has been strategically developed in consultation with industry experts to maintain the highest standards and professional relevance to ensure students gain the skills and knowledge required to fulfill GIS and spatial data analytic needs. By aligning the curriculum with current industry trends and forecasted need, graduates are prepared to meet the demands of the future workforce and make a positive impact in their chosen fields.

Goal 2: Enhance Exemplary Teaching and Learning Practices

> By incorporating interactive learning experiences, real-world case studies, and advanced technological tools, the proposed program exemplifies innovative teaching practices, enhancing student engagement and learning outcomes.

Goal 4: Intensify and strengthen the college's applied research agenda.

The applied project in the final semester capstone course allows students to apply the knowledge and skills developed in courses across the program to implement a proof-of-concept or solution for a real-world challenge to demonstrate the value of leveraging key data for effective and efficient decision-making.

8.2 Strategic Plan & Business Plan

Pillar: Our Students
Goal: To educate and inspire students to realize success in their careers and communities.

The field of spatial data analytics is a new and growing industry with a demonstrated high demand for skilled professionals. The proposed program addresses labour market needs and is responsive to emerging economies. The capstone course engages industry, and community partners and provides students with applied research and experiential learning opportunities. The program also provides opportunities for students to explore and create global partnerships and learning opportunities as there is a demonstrated need for this expertise in developing countries which can be addressed through student projects.

The proposed GIS for Data Analytics OCGC builds transferable and durable skills such as teamwork, critical thinking, time management, collaboration, communication, and presentation. These essential skills, alongside expertise in spatial data management and analysis ensure graduates are well-prepared to adapt to a variety of professional environments and succeed in a growing global industry.

8.3 Fit with Existing Ontario College Programs

Current MTCU codes involving graduate certificates in GIS-related programs capture various GIS applications and program foci.
- 70301 (Geographic Information System);
- 70303 (Geographic Information Systems);
- 70305 (Geographic Information Systems – Cartographic Specialist);
- 70524 (Analytics) [1]

Currently, three Colleges of Applied Arts and Technology (CAATs) have an intake for a GIS-related OCGC program under the MTCU codes 70301 and 70303. One college offers two streams: the *Geographic Information Systems*

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[1] One College's *Geographic Information Systems for Analytics* is the only GIS-related program under the MTCU code 70524.

(GIS) (Co-op) full-time program and the *Geographic Information Systems (GIS1)* two-year part-time program, which is delivered through Continuing Education. Three CAATS have active approvals however, there is no information on their college websites for intakes of their *Geographic Information Systems, Geographic Information Systems—Cartographic Specialist* and *Geographic Information Systems for Analytics* graduate certificate programs.

GIS-related programming in the CAAT system is also available as an Ontario College Diploma, for which there are three CAATs with active approvals under the MTCU codes 50303 (Geographic Information Systems Technician) and 56500 (Community Planning). Three CAATs focus on GIS applications in urban and regional planning and five other CAATS offer GIS as a part-time certificate under their Continuing Education or Professional and Part-Time Learning departments.

There are no programs in the Ontario college system that offer GIS training that is designed for data analytics at the OCGC level. DC would be the first college in the system to offer an analytics program specializing in Geographic Information Systems.

General Program Information

Proposed Program Title	Geographic Information Systems for Data Analytics
Proposed Credential	Ontario College Graduate Certificate (OCGC)
Academic Dean	Cristina Italia
Date of Review by PPRC	April 9, 2025
MTCU Code	70524 (Program Description)
Weight and Funding Unit (as per APS table)	Weight = 1.1 Funding Unit = 1.0
Proposed Tuition	$5,758.00
Classification of Instructional Program (CIP) Code(s)	45.0702 (not PGWP eligible)
NOC Codes	22214, 21223, 21211
Proposed Implementation (Year)/ Scheduled Intakes (F/W/S):	2026, Fall
Year 1 enrolment	20
Number of sections, Y1	One
International students, seat allocation	Zero
Number of Semesters	Two
Total hours	644
New or replacement program	New
Number of new FT/PT faculty	One FT, Four PT for Year-one
Program delivery methods	Online
Bring Your Own Device (BYOD)	Yes
New or renovated space requirements	n/a
Total capital costs	$0
Additional software costs (for college or for student)	$0

1. Approval Stages

The following approval stages have been assessed for this program:

☒ Labour Market Analysis

☒ Student Demand

☒ Budget reviewed and approved by the Chief Financial Officer and the Vice President Academic and Students

☒ Presented to the Program Proposal Review Committee (DATE: April 9, 2025)

☒ Reviewed by the Director, Academic Quality (DATE: April 24, 2025)

☒ Reviewed by the Dean, Centre for Teaching and Learning (DATE: April 24, 2025)

☒ New Program Proposal Summary (budget) reviewed by the Chief Financial Officer

☒ Approved by Vice-President, Academic and Students (DATE: April 28, 2025)

☒ Reviewed and approved by President (DATE: April 28, 2025)

2. Program Overview

Durham College (DC) is proposing to offer a Geographic Information Systems (GIS) for Data Analytics Ontario College Graduate Certificate (OCGC) within the Faculty of Business and Information Technology (BIT).

2.1 Program Description

The proposed Geographic Information Systems (GIS) for Data Analytics OCGC builds the knowledge and skills essential to create, manage, and analyze spatial and non-spatial data through visualizations and maps, and subsequently provide accurate and effective information to stakeholders in support of strategic decision-making. The proposed program includes a capstone course in the third semester in which students design, develop, and implement a GIS project in response to a real-world challenge. This applied project allows students to apply the knowledge and skills developed in courses across the program to implement a proof-of-concept or solution to demonstrate the value of leveraging key data for effective and efficient decision-making.

The field of spatial data analytics is a new and growing industry with a demonstrated high demand for skilled professionals. Graduates are positioned to apply these skills to fields like engineering, social sciences, health, and more. Job opportunities include government agencies, utility companies, defense organizations, mines, First Nations, municipalities, healthcare, forestry, planning, engineering, and business. The proposed program also covers geomatics technologies like spatial modeling and remote sensing from drones and satellites, which are useful in sectors like forestry, environment, public health, agriculture, and mining.

2

2.2   Career Outcomes

Professionals trained in GIS can work as GIS analysts, technicians and specialists in both the private and public sectors. Careers are also available as a data scientist, database analyst, cartographer (creates maps and visualizations), urban planner (uses GIS for city planning and development), remote sensing specialist (works with satellite and aerial imagery) and transportation planner (optimizes routes and logistics using GIS)[1] [2] [3]. In addition to these roles, many other career opportunities are available for professionals trained in GIS tools and technology within the information technology (IT), data science, research and health sectors, as well as business and government agencies.

GIS professionals have specialized knowledge of computer hardware and software relating to geospatial data and GIS. These technical skills also include database management, knowledge of programming languages and data visualization tools[4]. Longitudinal data ranging from 2014 to 2018 for entry-level data analytics jobs include proficiency with Python, Tableau and R programming[5]. Alongside this, proficiency in statistical analyses, modelling, remote sensing and photogrammetry is imperative to the profession[6]. They also have domain-specific knowledge of their professional fields such as urban planning, environmental science, epidemiology, criminology and emergency management. GIS workers need to be critical thinkers and are skilled in problem-solving as a large proportion of their job requires working with data and identifying solutions for decision-makers[7].

The chart below presents prospective job titles and areas for employment:

Job Titles	Where Graduates Might Work
- GIS technician/technologist - Database analysts - Data administrators - Database architect/analyst - Data warehouse analyst - Surveyor - GIS project manager - Urban planner - Cartographer - CAD technician	- City/town management - Engineering firms - Real estate agencies - Mining companies - Consulting firms - Government agencies - Construction companies - Transportation - Healthcare companies - Forestry companies

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[1] University of Southern California, 4 Reasons to Pursue A Career In GIS, accessed January 2025.
[2] University of West Florida, What can you do with a GIS degree?, accessed January 2025.
[3] One CAAT, Geographic information systems (GIS) (Co-op), accessed January 2025.
[4] Warner, T., Top 9 GIS Skills In High Demand In 2022, accessed January 2025.
[5] Dong, T. & Triche, J., A Longitudinal Analysis Of Job Skills For Entry-Level Data Analysts, accessed January 2025.
[6] University of Southern California, Top Skills for GIS Professionals, accessed January 2025.
[7] Elmhurst University, What Skills Does a GIS Analyst Require?, accessed January 2025.

3

2.3   Vocational Program Learning Outcomes (MTCU# 70524)

Vocational program learning outcomes (VLOs) for the proposed credential must be consistent with the requirements of the Ontario Credentials Framework and the Credential Validation Service.

The graduate of the program has reliably demonstrated the ability to:
1. Input, store, manage, and retrieve data to compare against spatial and non-spatial models when representing real-world scenarios.
2. Enhance, combine, and cleanse spatial datasets to ensure data consistency and accuracy for informed decision-making.
3. Assess user requirements to propose and prototype spatial data solutions that address industry challenges.
4. Create and present data visualizations tailored to diverse audiences to support informed decision-making.
5. Comply with ethical, legal, and professional standards of practice in the creation, application, and use of geospatial data analytics solutions.
6. Collaborate on diverse teams to plan, manage, and implement solutions.
7. Develop scripts to streamline data management and processes to ensure reproducibility.

2.4   Admission Requirements

- o   Ontario College Diploma (OCD), Ontario College Advanced Diploma (OCAD), or Degree in a related field.

  OR

  Relevant post-secondary and/or of three years related work experience may also be considered for admission.

- o   Proof of English language proficiency.

- o   Recommended basic experience in GIS and/or introductory programming in Python or JavaScript.
- o   Technical or professional writing experience is also recommended.

2.5   Differentiation (Within DC)

The proposed GIS for Data Analytics OCGC offers a curriculum focused on the control and management of spatial data in support of analytic and strategic decision-making processes. The field of spatial data analytics is a growing industry with the demand for skilled professionals. DC's proposed program develops the knowledge and skills necessary for students to create, manage, and analyze spatial and non-spatial data through visualizations and maps and subsequently provide accurate and effective information to stakeholders in support of strategic decision-making.

The proposed program complements the suite of IT programs in the Faculty of BIT and provides pathway opportunities for students in IT and science programs.

4

The data visualization aspect distinguishes the proposed program from existing IT programs offered at DC and across the sector. Students learn how to work with, manipulate, understand and communicate data provided by GIS tools which offers a more advanced approach over simply learning how to use those tools, which is the common focus of programs across the Colleges of Applied Arts and Technology (CAAT) system.

The following tables present the Graduate Count, Employment Rate and Employment Rate in a Related Field for the high affinity programs at DC that are related to the proposed GIS program.

Ministry Title: Computer Programming (MTCU 50503)

Related Programs at Durham – Computer Programming							
Program		Key Performance Indicator	Reporting Year				
Banner Code	MTCU Code		2018-19	2019-20	2020-21	2021-22	2022-23
CPPG	50503	Graduate Count	32	31	54	54	46
		Employment Rate	85.7% (7)	60.0% (5)	60% (10)	0.0% (1)	76.9% (13)
		Employment Rate in a Related Field	57.1% (7)	60.0% (5)	10.0% (10)	0.0% (1)	38.5% (13)

Ministry Title: Artificial Intelligence Analysis, Design and Implementation (MTCU 70502)

Related Programs at Durham – Artificial Intelligence Analysis, Design and Implementation							
Program		Key Performance Indicator	Reporting Year				
Banner Code	MTCU Code		2018-19	2019-20	2020-21	2021-22	2022-23
AIDI	70502	Graduate Count	N/A	N/A	68	62	110
		Employment Rate	N/A	N/A	57.1% (7)	N/A	66.7% (3)
		Employment Rate in a Related Field	N/A	N/A	0.0% (7)	N/A	33.3% (3)

5

Agenda Page 107

Ministry Title: Cybersecurity (MTCU 73002)

Related Programs at Durham – Cybersecurity							
Program		**Key Performance Indicator**	**Reporting Year**				
Banner Code	**MTCU Code**		**2018-19**	**2019-20**	**2020-21**	**2021-22**	**2022-23**
CYSC	73002	Graduate Count	42	69	60	38	72
		Employment Rate	60.0% (5)	0.0% (4)	N/A	100.0% (1)	100.0% (6)
		Employment Rate in a Related Field	20.0% (5)	0.0% (4)	N/A	100.0% (1)	50.0% (6)

Ministry Title: Data Analytics (MTCU 70717)

Related Programs at Durham – Data Analytics							
Program		**Key Performance Indicator**	**Reporting Year**				
Banner Code	**MTCU Code**		**2018-19**	**2019-20**	**2020-21**	**2021-22**	**2022-23**
DATA	70717	Graduate Count	N/A	45	58	71	221
		Employment Rate	N/A	83.3% (6)	50.0% (4)	83.3% (6)	83.3% (12)
		Employment Rate in a Related Field	N/A	66.7% (6)	0.0% (4)	33.3% (6)	33.3% (12)

The focus on data analytics, compliance and ethics and GIS technologies augments existing solutions to meet the rising need for GIS professionals who are knowledgeable in these areas.

DURHAM COLLEGE
SUCCESS MATTERS

3. **Program of Study**

Semester 1	Semester 2
14 weeks	14 weeks
Spatial Statistical Predictive Modelling 4 hours per week Online (●)	Ethical Leadership and Critical Decision-Making 3 hours per week Online (♥)
Spatial Data Strategies for Organizational Success 4 hours per week Online (■)	Project Management for Geospatial Analytics 3 hours per week Online (♥)
Spatial Data Management 1 4 hours per week Online (■)	Python Geospatial Analysis 4 hours per week Online (♪)
Python Geospatial Data Scripting 4 hours per week Online (♪)	Location Intelligence 4 hours per week Online (●)
Web Development and Mapping 3 hours per week Online (♪)	Spatial Data Management 2 3 hours per week Online (■)
Spatial Analysis and Visualization 3 hours per week Online (●)	Spatial Solutions Configuration and Development 3 hours per week Online (♪)
	GIS Capstone 4 hours per week Online (♦)
308 hours	336 hours

Themes:

Data Management (■)

Data Governance (♥)

Solutions and Automation (♪)

Experiential Learning (♦)

Spatial Intelligence (●)

Course Descriptions

Semester 1

Course Title: Spatial Statistical Predictive Modeling
Course description: Unlock the power of data to forecast the future using spatial tools and statistical modeling to identify trends, predict outcomes, and solve real-world problems. Transform raw data into actionable insights using industry-standard tools and create models that drive decision-making across industries.
Instructional Setting: Online (synchronous)
Total Hours (Semester): 56

7

Course Title: Spatial Data Strategies for Organizational Success
Course description: Discover the transformative power of GIS-driven insights. Develop a strategic mindset by learning to identify critical organizational needs, formulate data-driven hypotheses, and design effective spatial data strategies. Gain expertise in data sourcing, management, and analysis, while adhering to rigorous data governance principles. Effectively communicate data-driven plans to stakeholders and drive impactful organizational change.
Instructional Setting: Online (synchronous)
Total Hours (Semester): 56

Course Title: Spatial Data Management 1
Course description: Master the fundamentals of spatial data management. Gain hands-on experience with structured Vector, Raster, and LiDAR data sets. A focus on using standard techniques with structures query language (SQL) and using software tools to efficiently organize, query, transform, and manage geographic data. Build a robust foundation for handling the complex datasets that underpin successful spatial analysis projects.
Instructional Setting: Online (synchronous)
Total Hours (Semester): 56

Course Title: Python Geospatial Data Scripting
Course description: Develop strong skills in Python and gain a competitive edge in the rapidly evolving field of geospatial data science. Compile a python environment, write scripts that both document and simplify workflows. Using pre-existing knowledge of Python or another language, this course focuses on managing an environment that will use popular libraries to manage, transform and analyze spatial data. Python's versatility will become a key to solving technical challenges in innovative ways.
Instructional Setting: Online (synchronous)
Total Hours (Semester): 56

Course Title: Web Development and Mapping
Course description: Explore how the web empowers the sharing and dissemination of geographic information. By learning foundational skills in web development fundamentals, including HTML, CSS, and an introduction to JavaScript, configure and integrate commercial web products to create interactive and engaging web maps and applications. Through hands-on projects, develop the ability to design and implement dynamic web-based GIS solutions that leverage the power of the internet to share location-based data.
Instructional Setting: Online (synchronous)
Total Hours (Semester): 42

Course Title: Spatial Analysis and Visualization
Course description: Bring maps to life and tell compelling stories with spatial data. Focus on techniques to analyze geographic patterns, solve spatial problems, and create stunning visualizations that answer organizational questions. Harness the power of GIS to illuminate connections and insights that are invisible in traditional spatial datasets.

Instructional Setting: Online (synchronous)
Total Hours (Semester): 42

Semester 2

Course Title: Ethical Leadership and Critical Decision-Making
Course description: Navigate the complexities of decision-making with confidence and integrity. Develop leadership skills with a focus on ethical considerations in data-driven environments. Organize and balance competing priorities, address challenges, and guide teams toward impactful and responsible solutions.
Instructional Setting: Online (synchronous)
Total Hours (Semester): 42
Co-requisites: GIS Capstone

Course Title: Project Management for Geospatial Analytics
Course description: From concept to execution, identify the project management process tailored to the GIS and analytics field. Explore methodologies, tools, and best practices to lead successful projects. Discover how to plan, organize, and deliver outcomes on time and within scope, even in dynamic and data-heavy environments.
Instructional Setting: Online (synchronous)
Total Hours (Semester): 42
Pre-requisites: Semester 1 Courses
Co-requisites: GIS Capstone

Course Title: Python Geospatial Analysis
Course description: Extend Python programming skills further into more complex geospatial analysis. Study how to automate spatial tasks, process geospatial data efficiently, and unlock valuable insights through the power of Python and the numerous libraries available. Bridge the gap between programming and location-based analysis with a powerful toolkit for geospatial data science.
Instructional Setting: Online (synchronous)
Total Hours (Semester): 56
Pre-requisites: Spatial Statistical Predictive Modeling, Python Geospatial Data Scripting, Spatial Analysis and Visualization

Course Title: Location Intelligence
Course description: Transform geographic data into actionable business insights. Explore how spatial analytics informs decision-making in industries such as retail, logistics, and urban planning. Harness GIS tools and techniques to uncover patterns, optimize resources, and solve location-based challenges.
Instructional Setting: Online (synchronous)
Total Hours (Semester): 56
Pre-requisites: Semester 1 Courses

Course Title: Spatial Data Management 2
Course description: Take spatial data expertise to the next level with advanced SQL techniques and data management strategies. Build on foundational skills to handle large, complex datasets with efficiency and accuracy. There will be an emphasis on performance optimization, data security, and real-world GIS applications.
Instructional Setting: Online (synchronous)
Total Hours (Semester): 42
Pre-requisites: Spatial Data Management 1

Course Title: Spatial Solutions Configuration and Development
Course description: Design, configure, and deploy GIS solutions that address complex challenges. From setting up geospatial systems to tailoring applications for specific needs, apply innovative spatial solutions. Gain hands-on experience with leading technologies and create systems that scale with demand.
Instructional Setting: Online (synchronous)
Total Hours (Semester): 42
Pre-requisites: Spatial Data Management 1, Web Development and Mapping

Course Title: GIS Capstone
Course description: Put knowledge into action with a comprehensive, real-world project. Working individually or in teams, tackle a complex GIS and analytics problem from start to finish. This is an opportunity to showcase skills, solve real challenges, and make a lasting impression on potential employers.
Instructional Setting: Online (synchronous and asynchronous)
Total Hours (Semester): 56
Pre-requisites: Semester one courses
Co-requisites: Project Management for Geospatial Analytics

4. **Strategic Alignment**

The proposed program aligns with the Academic Plan, and the "Our Students" pillar of the Strategic and Business Plans.

The proposed GIS for Data Analytics OGCC is carefully designed to align with the strategic objectives outlined in the Academic, Strategic, and Business Plans, ensuring it not only meets but advances the college's mission and goals.

4.1 Academic Plan

Goal 1: Ensure Exceptional Quality in our Academic Programs

> The curriculum has been strategically developed in consultation with industry experts to maintain the highest standards and professional relevance to ensure students gain the skills and knowledge required to fulfill GIS and spatial data analytic needs. By aligning the curriculum with current industry trends and forecasted need, graduates are prepared to meet the demands of the future workforce and make a positive impact in their chosen fields.

10

Goal 2: Enhance Exemplary Teaching and Learning Practices

By incorporating interactive learning experiences, real-world case studies, and advanced technological tools, the proposed program exemplifies innovative teaching practices, enhancing student engagement and learning outcomes.

Goal 4: Intensify and strengthen the college's applied research agenda.

The applied project in the final semester capstone course allows students to apply the knowledge and skills developed in courses across the program to implement a proof-of-concept or solution for a real-world challenge to demonstrate the value of leveraging key data for effective and efficient decision-making.

4.2 Strategic Plan & Business Plan

Pillar: Our Students
Goal: To educate and inspire students to realize success in their careers and communities.

The field of spatial data analytics is a new, growing industry with a demonstrated high demand for skilled professionals. The proposed program reflects labour market needs and is responsive to emerging economies. The capstone course engages industry, and community partners and provides students with applied research and experiential learning opportunities. The program also provides opportunities for students to explore and create global partnerships and learning opportunities as there is a demonstrated need for this expertise in developing countries which can be addressed through student projects.

The proposed GIS for Data Analytics OCGC builds transferable and durable skills such as teamwork, critical thinking, time management, collaboration, communication, and presentation. These essential skills, alongside expertise in spatial data management and analysis ensures graduates are well-prepared to adapt to a variety of professional environments and succeed in a growing global industry.

4.2   Fit with Existing Ontario College Programs

Current MTCU codes involving graduate certificates in GIS-related programs capture various GIS applications and program foci.
- o 70301 (Geographic Information System);
- o 70303 (Geographic Information Systems);
- o 70305 (Geographic Information Systems – Cartographic Specialist);
- o 70524 (Analytics). [8]

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[8] One College's *Geographic Information Systems for Analytics* is the only GIS-related program under the MTCU code 70524.

Currently, three CAATs have an intake for a GIS-related OCGC program under the MTCU codes 70301 and 70303. One of those colleges offers two streams: the *Geographic Information Systems (GIS) (Co-op)* full-time program and the *Geographic Information Systems (GIS1)* two-year part-time program, which is delivered through Continuing Education. Three CAATS have active approvals however, there is no information on their college websites for intakes of their *Geographic Information Systems, Geographic Information Systems—Cartographic Specialist* and *Geographic Information Systems for Analytics* graduate certificate programs.

GIS-related programming in the CAAT system is also available as an Ontario College Diploma, for which there are three CAATs with active approvals under the MTCU codes 50303 (Geographic Information Systems Technician) and 56500 (Community Planning). Three CAATs focus on GIS applications in urban and regional planning and five other CAATS offer GIS as a part-time certificate under their Continuing Education or Professional and Part-Time Learning departments.

There are no programs in the Ontario college system that offer Geographic Information System (GIS) training that is designed for data analytics at the Ontario College Graduate Certificate level. DC would be the first college in the system to offer an analytics program specializing in Geographic Information Systems.

5.   **Labour Demand and Graduate Employment Possibilities**

Based on the results of the environmental scan, it is expected that the proposed GIS for Data Analytics OCGC will be a beneficial addition to DC's program offerings for several reasons.
- Skills taught in the proposed GIS program are widely applicable across several occupations and sectors enhancing graduates' employability.
- Only one GIS program exists within the East and Central regions indicating a need for the program in the region.
- The Provincial job outlook is positive for all associated occupations and endorsed by the ad-hoc Program Advisory Committee.
- Program performance rating for student experience, graduate satisfaction, graduate rate, employment rates and related employment rates are moderate to high.

5.1   Labour Market Analysis

A Geographic Information System (GIS) is a technology that stores, manipulates and analyzes geographic data that is then layered and transformed into visualizations[9]. It uses location data such as maps, along with descriptive data such as population or land use, to perform analyses and understand patterns,

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[9] ESRI, What is GIS?, accessed January 2025.

relationships and the geographic context of the data. This is also known as spatial analysis. Spatial data is comprised of city boundaries or roads (i.e., vector data), satellite imagery and aerial photos (i.e., raster data), demographics, climate, traffic, Global Positioning Systems (GPS) coordinates, transportation patterns and temporal data[10]. Within GIS, the term geographic relates to spatial identity or the location of certain objects that are on, under or above the surface of the earth[11]. Information refers to the need for data to be retained and interpreted, providing critical insights for decision-making in fields such as natural resource management, transportation, urban planning, public health and other public administration. The system encompasses the people, computer hardware and software required to generate, process and visualize this essential information.

GIS processes can be broken down into three main subcategories including data collection, data analysis and data presentation[12]. In data collection, GPS, remote sensing devices (e.g., LiDAR; Light detection and ranging) and airborne systems (e.g., images from satellites or aerial systems) capture location data that gets combined with coordinates, addresses, city boundaries and more, to generate a geospatial database and digital map. With data analysis, GIS software or other programming languages are used to combine multiple layers of geospatial data for analysis to draw meaningful conclusions. Lastly, a way to present geospatial data is to transform data points into visualizations such as 3D representations of structures, showcasing the multiple layers of data, heat maps and dashboards to provide a comprehensive view of trends and patterns[13]. These visualizations can help support decisions on planning, research and policymaking in various industry sectors.

The GIS framework consists of five fundamental components: hardware, software, data, methods and people[14]. Hardware includes devices such as computers, servers, GPS devices and mobile devices, that are used to access GIS applications. Software refers to applications such as ArcGIS[15] or QGIS[16], which enable users to access GIS functions necessary for storing, manipulating and analyzing geographic data. Data is categorized into spatial data (i.e., maps and satellite images) and attribute data (i.e., descriptive information). These are integrated to enhance data interpretation and guide which methods to use for spatial analysis[17]. The methods used to analyze this information depend on the

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[10] GeeksforGeeks, What is Geospatial Data Analysis, accessed January 2025.

[11] Ali, E., Geographic Information System (GIS): Definition, Development, Applications, and Components, accessed January 2025.

[12] GeeksforGeeks, What is spatial analysis?, accessed January 2025.

[13] Usmani et al., 2020, Geographic Information System And Big Spatial Data: A Review And Challenges, accessed January 2025.

[14] Kishore, P. & Rautray, S., The Five Essential Components Of GIS, accessed January 2025.

[15] ESRI, What is ArcGIS?, accessed January 2025.

[16] QGIS Project Steering Committee, QGIS: A free and open source geographic information system, accessed January 2025.

[17] Ali, E., Geographic Information System (GIS): Definition, Development, Applications, and Components, accessed January 2025.

organization's purpose for using GIS; however, they typically involve algorithms, statistics, formulas and data models. Lastly, people refer to all GIS users, including GIS professionals and the public.

Demand for GIS Professionals

GIS is used for an extensive number of purposes. GIS is designed to generate maps using surveying techniques, GPS, aerial photographs and satellite imagery. It can manage spatial datasets, perform spatial analyses and provide visual representations of the data[18]. Multiple datasets can be displayed on a map simultaneously, enabling users to identify relationships and associations between data layers. For example, first responders use GIS for emergency preparedness and disaster recovery. When responding to a hurricane in a given city, they may look at layers related to flood predictions, at-risk structures and power outages to identify high-priority areas in need of emergency services[19]. GIS is also used to conduct impact analyses to evaluate the effects of environmental changes, infrastructure development, transportation routes and public health concerns. One application of GIS is to execute route calculations for transportation networks by recognizing optimal paths for travel based on traffic, building infrastructure and environmental impacts. Moreover, in areas where flooding, forest fires and public health outbreaks are prominent, infrastructure analysis on irrigation systems, tectonic vulnerability of buildings and accessibility of healthcare facilities is conducted, respectively. GIS tools are also known for their ability to forecast and predict the future ramifications of events and occurrences such as urban air quality predictions, land-use planning and environmental forecasting[20].

Comparably, GIS is employed in a wide variety of settings nationally to inform decision-making. These settings include but are not limited to urban development, public health, agriculture and farming, transportation, environmental management, emergency response, crime mapping and business development[21] [22] [23]. For example, within the context of urban development, one of the objectives is to create resilient urban cities by using GIS technology to analyze data surrounding deforestation patterns, rising sea levels, greenhouse gas emissions and traffic analysis to determine optimal areas for building[24]. Major corporations use it to manage their supply chain, retailers to determine new store locations, agricultural farmers to identify the best crops, soils and water sources for their land and transportation companies for traffic analysis[25].

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[18] Usmani et al., 2020, Geographic Information System And Big Spatial Data: A Review And Challenges, accessed January 2025.
[19] ESRI, What is GIS?, accessed January 2025.
[20] Usmani et al., 2020, Geographic Information System And Big Spatial Data: A Review And Challenges, accessed January 2025.
[21] Spherical Insights, Global Geomatics Market Size, Share, and COVID-19 Impact Analysis, accessed January 2025.
[22] Better Business Research Insights, Geographic Information System (GIS) Market Overview, accessed January 2025.
[23] Abdulkareem, F., Role of Predictive Policing in Predicting Spatio-Temporal Crime Mapping, accessed January 2025.
[24] GeeksforGeeks, What is Spatial Analysis?, accessed January 2025.
[25] ESRI, What is GIS?, accessed January 2025.

14

Additionally, government agencies utilize GIS for visualizing gas live networks, zoning development, monitoring environmental changes and emergency response planning. GIS is also incorporated into our daily lives as it is seen on our cell phones for mapping and navigation.

The growing demand for GIS jobs is largely attributable to an increased use of spatial data to support decision-making across various applications and fields. GIS tools are useful for maps used in urban planning, the telecommunications sector moving towards 5G networks, the exponentially increasing use of Artificial Intelligence (AI) and Machine Learning (ML) and other related fields that utilize spatial data for their objectives such as the public health sector[26]. As global urban populations rise, these areas need professionals with the ability to use GIS software to visualize fast population changes and develop strategies to maintain quality of life and sustainability within cities[27]. In the telecommunications sector, wireless infrastructure developers are using GIS to find optimal locations for wireless tower placements that are supported by data and long-term efforts to maintain current connectivity demands[28]. With an increased use of AI and ML tools among various sectors, GIS users are incorporating AI and ML to automate tasks such as data processing, analysis, visualization and forecasting, ultimately leading to improved decision-making processes and more efficiently managed resources[29]. GIS tools and technology also played a crucial role in emergency management by tracking the spread of COVID-19[30]. It allowed users to track new cases, recoveries and deaths, providing critical data that informed high-level decision-making in public health and policy.

Within the geospatial market, challenges impacting the market's expansion have been emerging. Those include limitations on satellite imagery resolution and coverage, difficulties in data integration, high costs for data collection, as well as legal and regulatory issues with data privacy and security[31]. A related concern is the apparent lack of awareness of geospatial technology as a career. The Environmental Systems Research Institute (ESRI) Community reported that this is due partially to insufficient knowledge taught in secondary education about topics surrounding the geospatial field and that few jobs contain GIS in the job titles, which lends to the lack of visibility[32]. However, an advantage of GIS is that it facilitates collaboration with experts from multiple departments of varying expertise to aid in decision-making. The data can be viewed in an easy, yet understandable way as it can be transformed into visualizations. Nevertheless,

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[26] Gotz, C., Frates, J., & Weschler, S., GIS In Health Organizations: Emerging Trends For Professional Education, accessed January 2025.
[27] Deitrick, S. et al., Environment And Resident Perception: Using Geographic Information Systems And Survey Methods, accessed January 2025.
[28] Morea, A. & Katsirubas, P., Data-Driven Site Selection: How GIS Tools Are Transforming Tower Deployment, accessed January 2025.
[29] Pande, P., The Future Of GIS: How Advancements in AI And Machine Learning Are Shaping The Industry, accessed January 2025.
[30] Better Business Research Insights, Geographic Information System (GIS) Market Overview, accessed January 2025.
[31] Spherical Insights, Global Geomatics Market Share, Size, Trends, Analysis, accessed January 2025.
[32] Kerski, J., Sometimes Change Brings Innovation: GIS Programs in Higher Education, accessed January 2025.

GIS has a wide application to various government and non-government agencies that ultimately employ data collection, analysis and visualization techniques to make strategic decisions related to their organization's objectives.

The geospatial solutions market encompasses all aspects of geospatial-related hardware (e.g., GPS devices, satellites, sensors), software (e.g., ArcGIS and QGIS software) and services (e.g., consulting, data collection and management, system integration). Within this framework, there is the scope of geomatics and geospatial analytics. The former includes gathering raw spatial data using tools and techniques—GIS, GPS, remote sensing and surveying—and the latter involves spatial data modelling, data analysis and visualizations, respectively. Together, these components ensure the accuracy of data to make reliable interpretations and decisions surrounding the results. According to Grand View Research, the geospatial solutions market was valued at 438.2 billion USD in 2024 and is projected to reach 990.8 billion USD by 2030, with a compound annual growth rate (CAGR) of 14.7%[33]. Within this market, GIS and spatial analytics accounted for 42.6% of the total revenue, amounting to 186.6 billion USD in 2024. In Canada, the geospatial solutions market generated 23.8 billion USD in revenue in 2024, with forecasts expected to reach 56.7 billion USD by 2030. Growing at a CAGR of 15.7%, it is the fastest growing regional market in North America[34]. The market growth is driven by increasing investments in urban infrastructure, including smart city projects, as well as the increasing applications of GIS in business intelligence, public health, environmental management and disaster management[35]. There are some discrepancies in GIS and spatial analytics' market size values and CAGR rates as reports differ in their methodology. However, there is a consensus that the GIS market is expected to experience significant growth over the next six to eight years. With this growth, there will be an increase in demand for skilled GIS professionals across multiple sectors.

Funding & Policy

There are very few funding sources available directly involving the use of GIS solely; however, many government initiatives and grants encourage its integration in conjunction with the specific organization's discipline and research objectives[36]. For instance, one of Transport Canada's roles is to improve transportation efficiency and highway infrastructure by consistently assessing traffic flows and providing solutions for traffic congestion across Canada[37]. GIS tools and technology are one of many working pieces needed to achieve these standards. Canada supports researchers and professionals in the GIS industry through several funding opportunities. Programs such as Natural Resources

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[33] Grand View Research, Global Geospatial Solutions Market Size & Outlook, accessed January 2025.
[34] Grand View Research, Canada Geospatial Solutions Market Size & Outlook, accessed January 2025.
[35] GeeksforGeeks, What is Geospatial Data Analysis, accessed January 2025.
[36] ESRI, In Search of Federal Funding for GIS, accessed January 2025.
[37] Lapointe, M., Canada's Use of Geographical Information Systems for Transportation, accessed January 2025.

16

Canada's (NRCan) GeoConnections program and the Canadian Space Agency's (CSA) smartEarth initiative provide funding for geospatial projects which contributes to the modernization of the Canadian Geospatial Data Infrastructure (CGDI)[38]. Accordingly, associations such as ESRI, the Social Sciences and Humanities Research Council (SSHRC)[39] and the Natural Sciences and Engineering Research Council (NSERC)[40], provide various post-secondary scholarships and funding to students and academic researchers for research and development in areas of geomatics, spatial data and GIS. In 2022, ESRI renewed its support of more than $5 million worth of GIS software to the Canadian Research Data Centre Network (CRDCN) which provides access to data and conducts statistical analyses of imperative socio-economic and health issues occurring for Canadians[41]. These funding sources help ensure continuous skill development and innovation in the field. Policies such as the CGDI led by NRCan and the Standard on Geospatial Data implemented by the Treasury Board of Canada Secretariate, help regulate all stages of the data lifecycle from data collection, data privacy, management and efficient exchange of data[42] [43]. This reinforces GIS as a critical tool for informed decision-making.

Current Programs

Current programs emphasize traditional GIS training which focuses on using software such as ArcGIS Pro, to generate maps and visualizations. Cartography, remote sensing and image analysis, spatial analysis, GIS programming and Web GIS applications are common subjects covered in the currently active programs. The proposed Geographic Information Systems (GIS) for Data Analytics OCGC reflects a similar focus to the current programs, while under the scope of a data analytics. It focuses on spatial data analytics by incorporating traditional data analytics with GIS software. This involves examining an organizational problem, collecting spatial and non-spatial data, managing the data and providing insights through maps and dashboard visualizations. Topics such as ethics, statistics and dashboard creation for decision-making serve as key distinctions from existing programs. Graduates of the proposed program are equipped to conduct statistical analyses on various forms of spatial and non-spatial data, engage in spatial problem-solving using scientific repeatable methods and develop interactive ways to present information to support stakeholder decision-making. Furthermore, graduates are prepared to pursue continuing education through degree- or graduate-level studies in related fields, thus enriching their career prospects in evolving domains of geospatial and data analytics fields.

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[38] Natural Resources Canada, GeoConnections Announcement of Opportunities for Fiscal Years 2025-2026 and 2026-2027, accessed January 2025.
[39] Social Sciences and Humanities Research Council of Canada, Awards Search Engine, accessed January 2025.
[40] Natural Sciences and Engineering Research Council of Canada, NSERC's Awards Database, accessed January 2025.
[41] ESRI, Esri Canada renews $5M support for Canadian Research Data Centre Network, accessed January 2025.
[42] GEO, About Us, accessed January 2025.
[43] Government of Canada, Standard on Geospatial Data, accessed January 2025.

17

Associations and Affiliations
- American Society for Photogrammetry and Remote Sensing (ASPRS)
- Canadian Institute of Geomatics (CIG)
- Canadian Remote Sensing Society (CRSS)
- Canadian Research Data Centre Network (CRDCN)
- Canadian Space Agency (CSA)
- Environment Systems Research Institute (ESRI)
- International Cartographic Association (ICA)
- International Society of Photogrammetry
- GeoAlliance
- Geographic Information Systems (GIS) Certification Institute
- Geomatics Canada
- Natural Resources Canada (NRCan)

Certifications
- ESRI Technical Certification (ESRI)
- Geomatics Specialist—GIS, Land Information System (LIS), Photogrammetry, Remote sensing, Cartography, Geodesy, or Geomatics Management (CIG)
- GIS Professional Certification (GIS Certification Institute)
- Mapping Scientist or Technologist Certification (ASPRS)

Employment Projections

The National Occupation Classification (NOC)[44] provides a standardized framework for organizing the labour force into a coherent system. Statistics Canada updated the NOC classifications in 2021 to provide an updated and more specific reflection of the labour market. The use of 5 digits instead of 4 digits for the NOC codes allows for more specificity in the jobs described under that category. However, several sources of labour market information have not yet transformed their database from the 2016 NOC structure to the 2021 NOC structure. Hence, the following description identifies the relevant 2021 codes and their 2016 equivalencies below but the discussion in this section primarily relies upon the 2021 framework.

Job titles and descriptions relevant to Geographic Information Systems (GIS) were collated from a variety of labour market reports. Based on the titles and descriptions, three key five-digit NOC codes were identified: 22214, 21211 and 21223 as relevant to the labour market pertaining to GIS professionals. It is important to note that the aforementioned NOC codes are not indicative of all available occupations in GIS. The three chosen are the most relevant occupations with respect to the proposed GIS program. These three codes are:

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[44] Government of Canada, National Occupational Classification – NOC 2021 Version 1.0, accessed Jan 2025.

- o 22214 (2021) – Technical occupations in geomatics and meteorology (e.g., cartographer, geographic information systems (GIS) technician, remote sensing technician) is equivalent to 2255 (2016) – Technical occupations in geomatics and meteorology.
- o 21211 (2021) – Data scientists (e.g., Data scientist, machine learning specialist, quantitative analyst) is equivalent to occupations from 2171 (2016) – Information systems analysts and consultants, 2172 (2016) – Database analysts and data administrators and 2173 (2016) – Software engineers and designers.
- o 21223 (2021) – Database analysts and data administrators (e.g., data administrator, data warehouse analyst, database analyst) is equivalent to 2172 (2016) – Database analysts and data administrators.

The following table depicts a selection of the specialized skills pulled from active job postings in occupations related to GIS:

In Demand Skills		
NOC Code - Occupation	**Specialized Skills**	**Skills for Success**
22214 – Technical occupations in geomatics and meteorology 21211 – Data scientists 21223 – Database analysts and data administrators	• Python & SQL (Programming Language) • Computer Science • Machine Learning • Data Science	• Communication • Management • Problem-Solving • Research

Source: Occupational Profiles, Lightcast Analyst 2024.3, accessed Feb 2025.

Labour Market Outlook

National Outlook

Occupational Classification: National
The following table displays wages, occupation statistics and employment outlooks for relevant occupations in Canada:

Wages, Occupational Statistics and Employment Outlook (National)					
NOC Code – Occupation	**Median Wage**	**Employment in 2023**	**Percentage of workers aged 50 and over**	**Median Retirement Age in 2023**	**Outlook to 2033[45]**
22214 – Technical occupations in geomatics and meteorology	$37.00	8,700	22%	67	Strong Risk of Surplus

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[45] Definitions correspond to 2024-2033 national labour market data taken from the Department of Employment and Social Development Canada (ESDC) and are based on the Canadian Occupational Projections System (COPS).
Strong Risk of Shortage: This occupation is expected to face a strong risk of labour shortage over the period of 2024-2033 at the national level.
Moderate Risk of Shortage: This occupation is expected to face a moderate risk of labour shortage over the period of 2024-2033 at the national level.

19

Wages, Occupational Statistics and Employment Outlook (National)					
NOC Code – Occupation	Median Wage	Employment in 2023	Percentage of workers aged 50 and over	Median Retirement Age in 2023	Outlook to 2033[45]
21211 – Data scientists	$44.10	36,600	16%	62	Balance
21223 – Database analysts and data administrators	$42.36	52,400	22%	61	Balance

Source: Employment and Social Development Canada https://www.jobbank.gc.ca/trend-analysis/search-occupations, Canadian Occupational Projections System https://occupations.esdc.gc.ca, accessed February 2025.

Provincial Outlook

Occupational Classification: Provincial
The following table displays the provincial job prospects over the next 3 years for the relevant occupations, as well as median wage:

Wages, Occupational Statistics and Employment Outlook (Provincial)			
NOC Code - Occupation	Median Wage	Current Employment	Prospects over the next 3 years[46]
22214 – Technical occupations in geomatics and meteorology	$37.00	8,700	22%
21211 – Data scientists	$44.10	36,600	16%
21223 – Database analysts and data administrators	$42.36	52,400	22%

Source: Employment and Social Development Canada https://www.jobbank.gc.ca/trend-analysis/search-occupations, accessed February 2025.

The following figure displays the provincial job outlook rating (2023-2027)[47] for the relevant occupations, as well as annual median income.

Balance: Labour demand and labour supply are expected to be broadly in line for this occupation group over the period of 2024-2033 at the national level.
Moderate Surplus: This occupational group is expected to face moderate labour surplus conditions over the period of 2024-2033 at the national level.
Strong Risk of Surplus: This occupation is expected to face a strong risk of labour surplus over the period of 2024-20233 at the national level.
[46] Reflects the previous provincial labour market data projections for the period of 2024 to 2026, updated as of December 11th, 2024. The provincial labour market data rankings are defined by the Department of Employment and Social Development Canada (ESDC):
Very good: the short- and medium-term potential for employment for this occupation group is significantly higher than the regional average, compared to other occupations.
Good: the short- and medium-term potential for employment for this occupation group is higher than the regional average, compared to other occupations.
Moderate: the short- and medium-term potential for employment for this occupation group is comparable to the regional average, compared to other occupations.
Limited: the short- and medium-term potential for employment for this occupation group is below the regional average, compared to other occupations.
Very limited: the short- and medium-term potential for employment for this occupation group is significantly lower than the regional average, compared to other occupations over the next 3 years.
[47] Outlook rankings are defined by the Ontario Ministry of Labour, Immigration, Training and Skills Development:
Very good: This situation is most favourable to job seekers since it indicates moderate recent and future employer demand for workers. Relative to other occupations, these occupations tended to have very high numbers of online job postings relative to the size of the occupation, very low unemployment rates in the recent past, very high projected employment growth rates and very high projected rates of attrition due to retirement.

20

22214 – Technical occupations in geomatics and meteorology

Job outlook
Moderate

Median income
$75,000

Top location
Toronto (29%)

21211 – Data scientists

Job outlook
Good

Median income
$98,000

Top location
Toronto (69%)

21223 – Database analysts and data administrators

Job outlook
Very good

Median income
$86,000

Top location
Toronto (60%)

Source: Ontario Job Profiles https://www.services.labour.gov.on.ca/labourmarket, accessed January 2025.

The median hourly wage rate for all three occupations is above the most recent median annual income in Ontario for 2022 ($42,700)[48].

The following table presents summary job profile statistics provided by the Government of Ontario for the relevant occupations:

Provincial Summary Job Profile Statistics			
NOC Code - Occupation	Males	Females	Unemployment Rate
22214 – Technical occupations in geomatics and meteorology	62%	38%	3.8%
21211 – Data scientists	70%	30%	3.0%
21223 – Database analysts and data administrators	59%	41%	4.2%

Source: Ontario Job Profiles https://www.services.labour.gov.on.ca/labourmarket, accessed January 2025.

Unemployment rates for all three occupations are lower than the 2024 average provincial unemployment rate (seven per cent)[49].

The following table displays the education level of employees for relevant occupations in Ontario:

Good: This situation is more favourable to job seekers since it indicated moderate recent and future employer demand for workers. Relative to other occupations, these occupations tended to have high numbers of online job postings relative to the size of the occupation, low unemployment rates in the recent past, high projected employment growth rates and high projected rates of attrition due to retirement.
Moderate: This situation is somewhat favorable to job seekers since it indicates moderate recent and future employer for workers. Relative to other occupations, these occupations tended to have moderate number of online job postings relative to the size of the occupation, moderate unemployment rates in the recent past, moderate projected employment growth rates and moderate projected rates of attrition due to retirement.
[48] Statistics Canada, Employee wages by industry annual, accessed January 2025.
[49] Statistics Canada, Unemployment rate, participation rate and employment rate by sex, annual, accessed March 2025.

Educational Attainment			
Education Level	**22214 – Technical occupations in geomatics and meteorology**	**21211 – Data scientists**	**21223 – Database analysts and data administrators**
No certificate, diploma or degree:	0%	0%	0%
Secondary (high) school diploma or equivalency certificate	5%	4%	8%
Apprenticeship or trades certificate or diploma	1%	0%	1%
College, CEGEP or other non-university certificate or diploma	26%	4%	16%
Bachelor's degree	50%	32%	43%
Degree in medicine, dentistry, veterinary medicine or optometry	0%	0%	0%
Master's degree	12%	43%	24%
Earned doctorate	1%	13%	2%
Other	5%	4%	6%

Source: Ontario Job Profiles https://www.services.labour.gov.on.ca/labourmarket, accessed January 2025.
Percentages may not sum to 100 due to rounding.

The following table presents provincial employment opportunities for each relevant occupation. Within each column, the percentages indicate the distribution of all individuals employed in the corresponding occupation across the select census divisions:

Employment Share by Census Division				
Census Division	**All Occupations**	**22214 – Technical occupations in geomatics and meteorology**	**21211 – Data scientists**	**21223 – Database analysts and data administrators**
Durham	**5%**	4%	3%	4%
Toronto	**21%**	12%	40%	26%
Peel	**10%**	6%	10%	13%
York	**9%**	5%	12%	13%
Peterborough	**1%**	3%	<1%	<1%
Northumberland	**1%**	1%	<1%	<1%
Kawartha Lakes	**1%**	1%	<1%	<1%

Source: Ontario Job Profiles https://www.services.labour.gov.on.ca/labourmarket, accessed January 2025.

22

The following table presents the combined number of current and projected jobs that are expected to be created in Ontario and select census divisions across all three relevant occupations:

Occupation Summary (Ontario and Select Census Divisions) – 2024 and 2029					
Region	2024 Jobs	2029 Jobs	Change	% Change	Average Hourly Wages
Ontario	**45,589**	**49,797**	**4,208**	**9%**	**$43.50**
Durham	2,340	2,648	308	13%	$44.20
Toronto	13,746	14,700	954	7%	$44.24
Peel	5,752	6,250	498	9%	$44.24
York	4,925	5,471	546	11%	$44.22
Peterborough	129	131	2	2%	$44.92
Northumberland	57	58	1	2%	$44.93
Kawartha Lakes	52	52	0	0%	$44.87

Source: Labour Force Survey, Lightcast Analyst 2024.3, accessed Feb 2025.

Local Outlook

Occupational Classifications: Region of Durham

The following table presents the number of jobs and hourly wages for all relevant occupations within the Durham census division. Job counts are presented for 2024, in addition to a projection of the number of jobs in 2029:

Durham Region Employment Outlook - 2024 and 2029					
NOC Code - Occupation	2024 Jobs	2029 Jobs	Change	% Change	Average Hourly Wages
22214 – Technical occupations in geomatics and meteorology	72	67	-5	-7%	$39.25
21211 – Data scientists	237	273	36	15%	$43.75
21223 – Database analysts and data administrators	2,031	2,308	277	14%	$44.45
Total	**2,340**	**2,648**	**308**	**13%**	**$44.20**

Source: Labour Force Survey, Lightcast Analyst 2024.3, accessed Feb 2025.

The following table presents information for the self-employment in selected occupations within the Durham census division:

Durham Region Self-Employment Outlook - 2024 and 2029				
NOC Code - Occupation	2024 Jobs	2029 Jobs	Change	% Change
22214 – Technical occupations in geomatics and meteorology	<10	<10	N/A	N/A
21211 – Data scientists	<10	<10	N/A	N/A
21223 – Database analysts and data administrators	70	74	4	6%
Total	**77**	**82**	**5**	**6%**

The occupations reviewed above are distributed across the economy in a variety of different industries. The figure below illustrates the wide distribution of the high affinity occupations in Ontario:
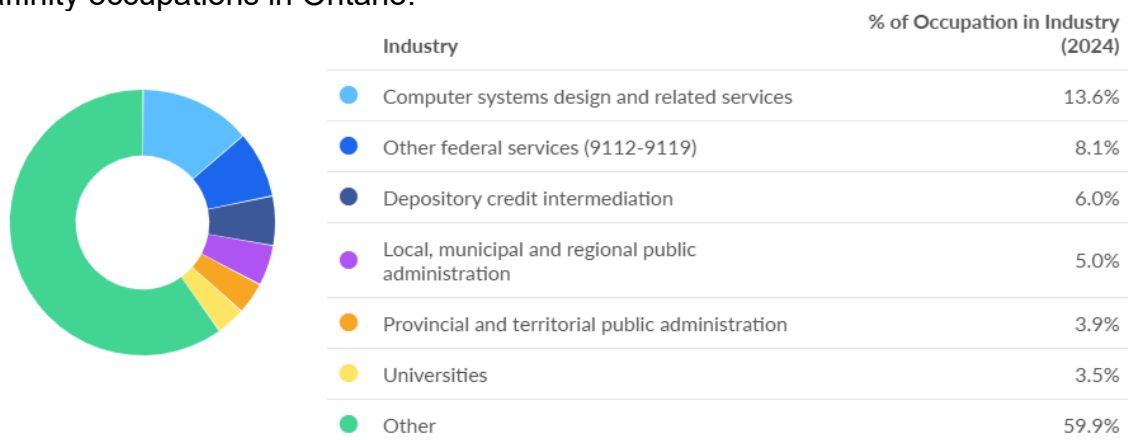
Industry	% of Occupation in Industry (2024)
Computer systems design and related services	13.6%
Other federal services (9112-9119)	8.1%
Depository credit intermediation	6.0%
Local, municipal and regional public administration	5.0%
Provincial and territorial public administration	3.9%
Universities	3.5%
Other	59.9%

The figure above illustrates the highest concentration of the occupations related to the proposed GIS for Data Analytics program is in *Computer systems design and related services;* however, a large percentage of occupations (59.9 per cent) are captured in *Other* industries, which demonstrates the breadth of occupation opportunities.

The following table displays the sectors in which the relevant occupations are employed:

22214 – Technical occupations in geomatics and meteorology		21211 – Data scientists	
44%	Public Administration	34%	Professional, scientific and technical services
30%	Professional, scientific and technical services	24%	Finance and insurance
6%	Utilities	10%	Information and cultural industries
3%	Agriculture, forestry, fishing and hunting	9%	Public administration
3%	Information and cultural industries	4%	Retail trade
12%	All other industries	19%	All other industries

21223 – Database analysts and data administrators	
26%	Professional, scientific and technical services
18%	Public administration
14%	Finance and insurance
7%	Information and cultural industries
6%	Health care and social assistance

21223 – Database analysts and data administrators	
30%	All other industries

Source: Ontario Job Profiles https://www.services.labour.gov.on.ca/labourmarket, accessed Jan 2025.
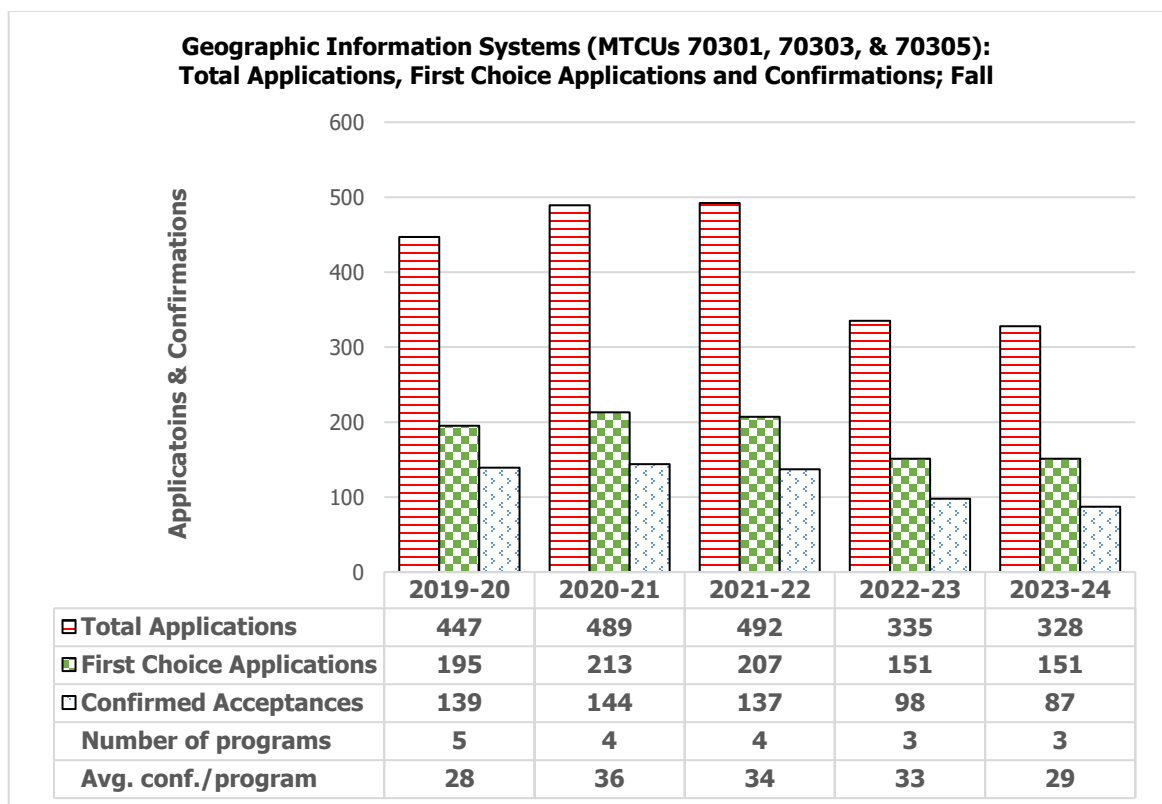
All the relevant occupations are prevalent in the professional, scientific and technical services and public administration sector. The finance and insurance and information cultural industries sectors are common among *Data scientists* and *Database analysts and data administrators.*

6. Student Interest

Applications and Acceptances

The following figure displays system-wide domestic applications, first choice applications and confirmed acceptances for the Fall intake of the GIS programs in Ontario (MTCUs 70301, 70303 & 70305):

Geographic Information Systems (MTCUs 70301, 70303, & 70305): Total Applications, First Choice Applications and Confirmations; Fall

	2019-20	2020-21	2021-22	2022-23	2023-24
Total Applications	447	489	492	335	328
First Choice Applications	195	213	207	151	151
Confirmed Acceptances	139	144	137	98	87
Number of programs	5	4	4	3	3
Avg. conf./program	28	36	34	33	29

Source: OCAS Data Warehouse accessed January 2025. *Year 2020-21 had 5 programs with applications however, one program did not receive any confirmed acceptances which is reflected in the 'Number of programs' as 4 programs.

Average year-over-year growth is presented below:

- The average growth[50] between 2019 and 2023 for total applications was negative six per cent.

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[50] Average Growth refers to the average change each year.

- The average growth between 2019 and 2023 for first choice applications was negative five point two per cent.
- The average growth between 2019 and 2023 for confirmed acceptances was negative10.1 per cent.

The following table presents the total applications, first choice applications, and confirmed acceptances for the Fall intake of the GIS programs (MTCUs 70301, 70303 & 70305) broken down by college:

Domestic Applicant Interest in Fall GIS (MTCU 70301, 70303 & 70305) Programs at Ontario CAATs							
College	Measure	2019-20	2020-21	2021-22	2022-23	2023-24	Rolling Avg. Change
CAAT (Fall)*	Total Applications	447	489	492	335	328	-6%
	First Choice Applications	195	213	207	151	151	-5%
	Confirmations	139	144	137	98	87	-10%

Source: OCAS Data Warehouse, accessed: Jan 2025.

The following table presents the total applications, first choice applications, and confirmed acceptances for the Winter intake of the GIS programs (MTCUs 70301, 70303 & 70305) broken down by college:
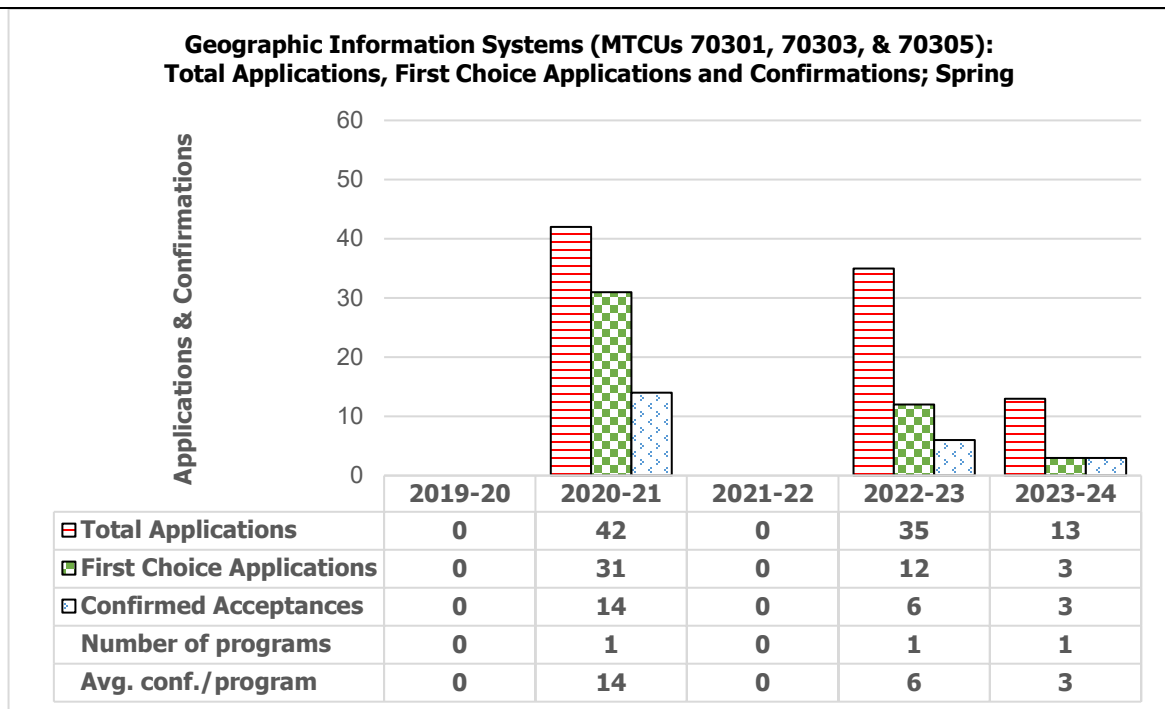
Domestic Applicant Interest in Winter GIS (MTCUs 70301, 70303, 70305) Programs at Ontario CAATs							
College	Measure	2019-20	2020-21	2021-22	2022-23	2023-24	Rolling Avg. Change
CAAT (Winter)*	Total Applications	0	0	9	7	19	37%[51]
	First Choice Applications	0	0	2	2	4	25%
	Confirmations	0	0	0	0	2	N/A

Source: OCAS Data Warehouse, accessed: Jan 2025.

Overall, there has been an increase in domestic applications and confirmations for the Winter intake of GIS programs.

The following figure displays system-wide domestic applications, first choice applications and confirmed acceptances for the Spring intake of the GIS programs in Ontario (MTCUs 70301, 70303 & 70305):

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[51] Excluding the 2019-20 and 2020-21 years, the average growth for total applications was 74.6% and first choice applications was 50.0%.

26

**Geographic Information Systems (MTCUs 70301, 70303, & 70305):
Total Applications, First Choice Applications and Confirmations; Spring**

	2019-20	2020-21	2021-22	2022-23	2023-24
Total Applications	0	42	0	35	13
First Choice Applications	0	31	0	12	3
Confirmed Acceptances	0	14	0	6	3
Number of programs	0	1	0	1	1
Avg. conf./program	0	14	0	6	3

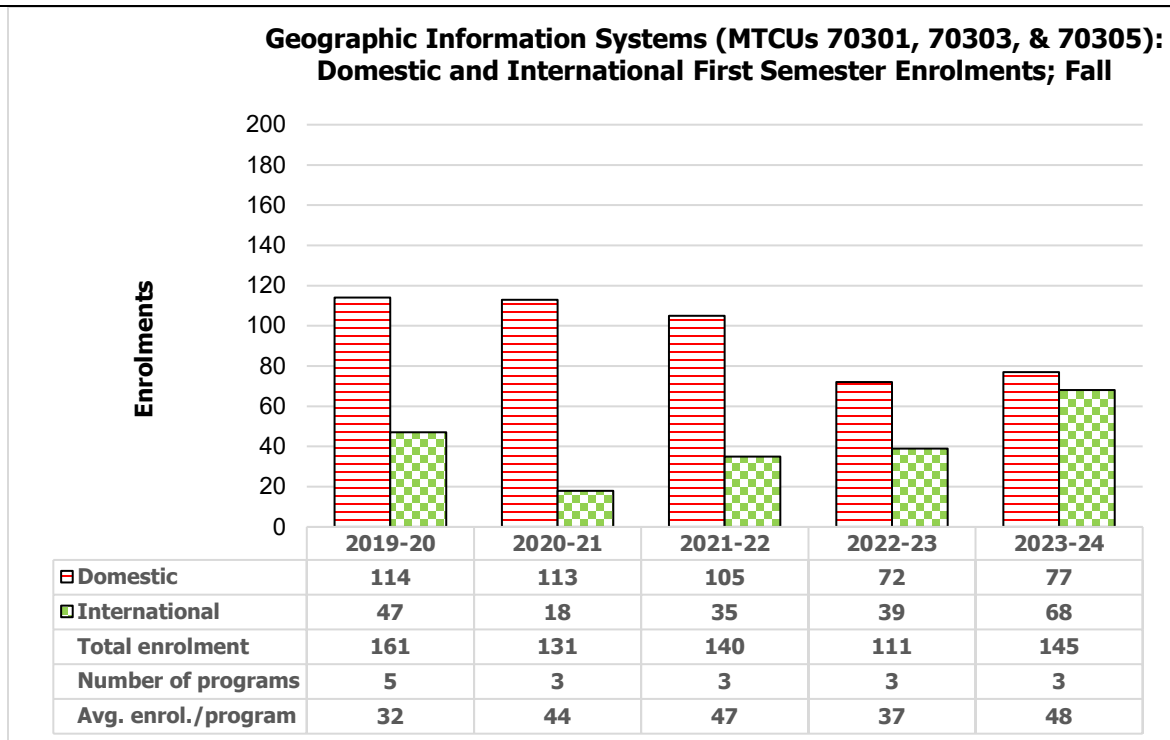Source: OCAS Data Warehouse, accessed: Jan 2025.

Average year-over-year growth is presented below:

- The average growth[52] between 2019 and 2023 for total applications was -40.7 per cent.
- The average growth between 2019 and 2023 for first choice applications was -43.8 per cent.
- The average growth between 2019 and 2023 for confirmed acceptances was -37.5 per cent.

Enrolment

The following figure displays system-wide first semester enrolments, domestic and international for the Fall intake for GIS programs at Ontario CAATs (MTCU 70301, 70303 & 70305):

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[52] Average Growth refers to the average change each year.

Geographic Information Systems (MTCUs 70301, 70303, & 70305): Domestic and International First Semester Enrolments; Fall

	2019-20	2020-21	2021-22	2022-23	2023-24
Domestic	114	113	105	72	77
International	47	18	35	39	68
Total enrolment	161	131	140	111	145
Number of programs	5	3	3	3	3
Avg. enrol./program	32	44	47	37	48

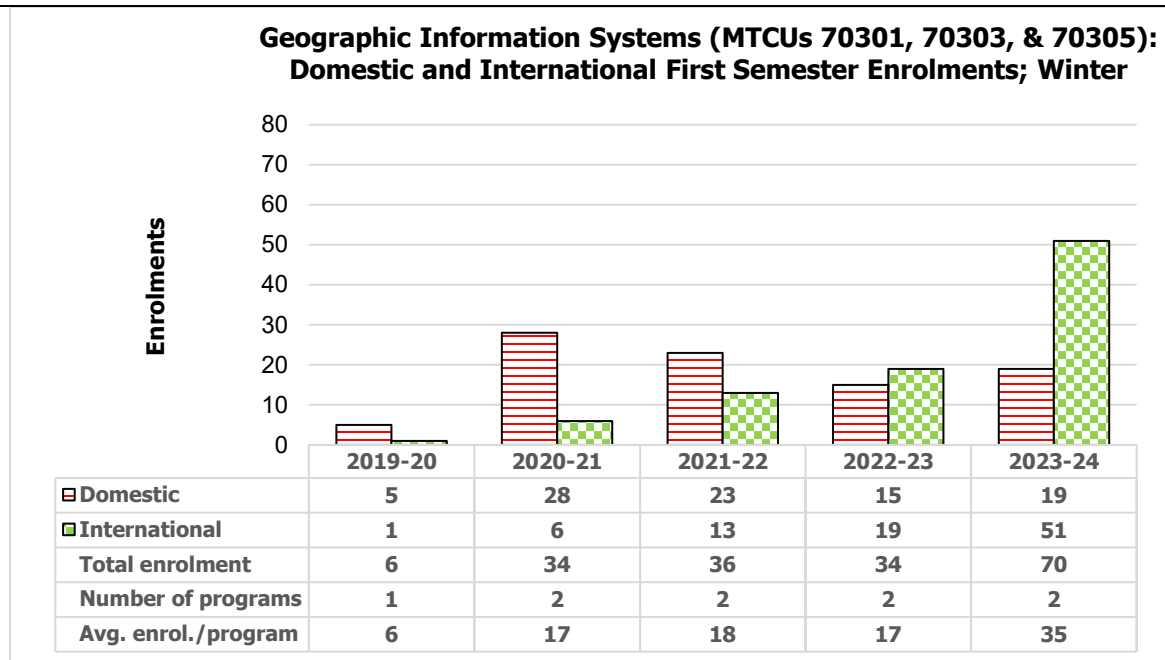*Source: OCAS Data Warehouse, accessed: Jan 2025.*

There have been relatively consistent levels of domestic enrolment for the fall intakes of GIS programs at CAATs over the past five years. International student enrolment has seen an increase for fall intakes, particularly for 2023-2024.

Average year-over-year growth is presented below:

- The average growth[53] between 2019 and 2023 for domestic enrolments was negative eight point one per cent.
- The average growth between 2019 and 2023 for international enrolments was 29.6 percent.
- The average growth between 2019 and 2023 for total enrolments was negative zero point five per cent.

The following figure displays system-wide first year enrolments, domestic and international for the Winter intake for GIS programs at Ontario CAATs (MTCUs 70301, 70303 & 70305):

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[53] Average Growth refers to the average change each year.

Geographic Information Systems (MTCUs 70301, 70303, & 70305): Domestic and International First Semester Enrolments; Winter

	2019-20	2020-21	2021-22	2022-23	2023-24
Domestic	5	28	23	15	19
International	1	6	13	19	51
Total enrolment	6	34	36	34	70
Number of programs	1	2	2	2	2
Avg. enrol./program	6	17	18	17	35

Source: OCAS Data Warehouse, accessed: Jan 2025.
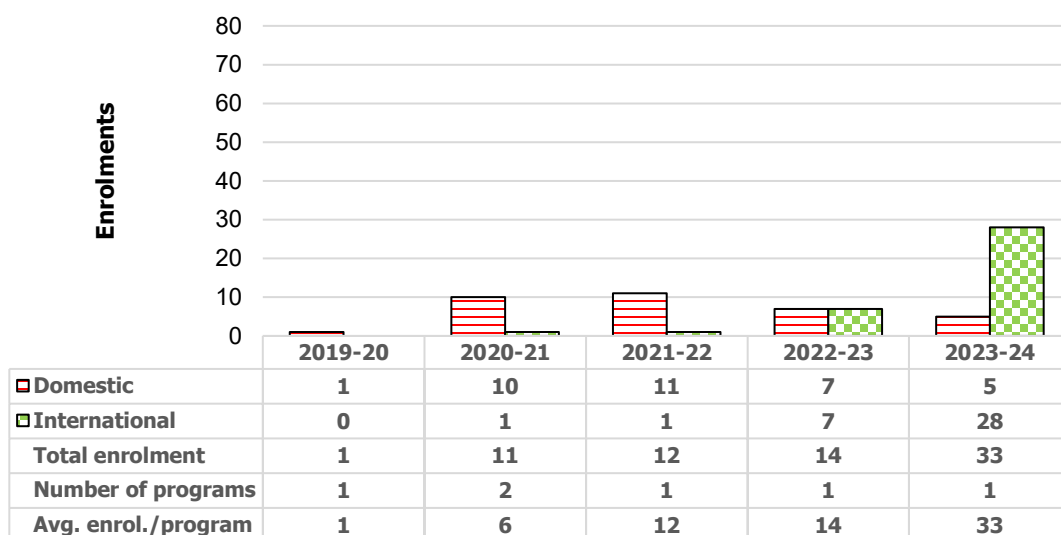
Average year-over-year growth is presented below:
- The average growth[54] between 2019 and 2023 for domestic enrolments was 108.5 per cent.
- The average growth between 2019 and 2023 for international enrolments was 207.8 per cent.
- The average growth between 2019 and 2023 for total enrolments was 143.2 per cent.

There has been an increase in domestic enrolments in the Winter intake of GIS programs at CAATs over the past five years.

The following figure displays system-wide first year enrolments, domestic and international for the Spring intake of GIS programs at Ontario CAATs (MTCUs 70301, 70303 & 70305):

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[54] Average Growth refers to the average change each year.

Geographic Information Systems (MTCUs 70301, 70303, & 70305):
Domestic and International First Semester Enrolments; Spring

	2019-20	2020-21	2021-22	2022-23	2023-24
Domestic	1	10	11	7	5
International	0	1	1	7	28
Total enrolment	1	11	12	14	33
Number of programs	1	2	1	1	1
Avg. enrol./program	1	6	12	14	33

Source: OCAS Data Warehouse, accessed: Jan 2025.

Average year-over-year growth is presented below:
- The average growth[55] between 2019 and 2023 for domestic enrolments was 211.3 per cent.
- The average growth between 2019 and 2023 for international enrolments was 225.0 per cent.
- The average growth between 2019 and 2023 for total enrolments was 290.4 per cent.

There have been limited but relatively stable domestic enrolments for the Spring intake of GIS programs at CAATs over the past five years.

The following table presents five years of domestic and international Fall, Winter, and Spring enrolments for GIS programs at Ontario CAATs (MTCUs 70301, 70303 & 70305):

GIS (MTCUs 70301, 70303 & 70305) First Semester Enrolment – Domestic							
College	Term	2019-20	2020-21	2021-22	2022-23	2023-24	Rolling Avg. Change
CAAT	Fall	114	113	105	72	77	-8%
	Winter	5	28	23	15	19	109%
	Spring	1	10	11	7	5	211%

Source: OCAS Data Warehouse, accessed Jan 2025.

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[55] Average Growth refers to the average change each year.

| GIS (MTCUs 70301, 70303 & 70305) First Semester Enrolment – International ||||||||
College	Term	2019-20	2020-21	2021-22	2022-23	2023-24	Rolling Avg. Change
CAAT	Fall	47	18	35	39	68	30%
	Winter	1	6	13	19	51	208%
	Spring	0	1	1	7	28	225%

Source: OCAS Data Warehouse, accessed Jan 2025.

Overall, enrolment in GIS programs has been growing over the past five years, especially with international students; however, the proposed program is not Post Graduate Work Permit (PGWP) eligible.

Program Performance

The following table presents aggregate results from the Graduate Outcomes and Employer Survey[56] (GOES) for Marketing Management programs.
GOES measures the satisfaction of Ontario College graduates with their college education and employment outcomes following graduation. It assesses perceptions on how well the college experience has prepared them to meet their goals after graduation as well as the needs of their employers. These results will be further explored in the subsequent sections.

System Graduate and Employment GOES Results				
	2018-19	2019-20	2020-21	2021-22	2022-23
Graduate Satisfaction - GIS (MTCU 70301, 70303 & 70305)					
MTCU 70301	100.0%	88.9%	100.0%	100.0%	N/A
MTCU 70303	85.7%	85.7%	66.7%	87.5%	66.7%
MTCU 70305	90.9%	78.6%	66.7%	92.9%	87.0%
GOES Graduation Rate (domestic) - GIS (MTCU 70301, 70303 & 70305)					
MTCU 70301	60.9%	60.0%	51.9%	33.3%	88.2%
MTCU 70303	84.2%	60.5%	66.7%	69.0%	66.7%
MTCU 70305	85.6%	90.2%	81.3%	89.7%	78.4%
Graduate Employment Rate - GIS (MTCU 70301, 70303 & 70305)					
MTCU 70301	75.0%	100.0%	100.0%	100.0%	N/A
MTCU 70303	85.7%	100.0%	100.0%	66.7%	85.7%
MTCU 70305	92.7%	79.2%	88.9%	84.6%	78.9%
Graduate Related Employment Rate - GIS (MTCU 70301, 70303 & 70305)					

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[56] The Graduate Outcome and Employer Satisfaction Survey replaced the prior KPI Graduate and Employer Survey. This survey is conducted by all CAAT colleges in order to measure 4 KPI's Graduate Employment Rate, Graduate Satisfaction Rate, Employer Satisfaction Rate, Graduation Rate.

31

System Graduate and Employment GOES Results					
	2018-19	2019-20	2020-21	2021-22	2022-23
MTCU 70301	100.0%	100.0%	100.0%	100.0%	50.0%
MTCU 70303	38.5%	53.3%	70.0%	100.0%	80.0%
MTCU 70305	89.8%	87.5%	86.4%	100.0%	89.5%

https://www.ontario.ca/page/college-graduation-satisfaction-and-job-rates

Student Experience

In 2021-22, the Ontario Colleges Student Experience Survey was administered by the Ontario College Application Service (OCAS) to 22 CAATs[57]. The survey assesses the student experience according to three key capstone questions. These questions focus on the program specific content and skills, teaching and learning and work integrated learning.

Student Experience – GIS (MTCU 70301)								
	Knowledge + Skills			Teaching + Learning			Work Integrated Learning		
College	2021-22	2022-23	2023-24	2021-22	2022-23	2023-24	2021-22	2022-23	2023-24
CAAT	50.0%	85.7%	81.8%	100.0%	57.1%	72.7%	100.0%	N/A	100.0%
Student Experience – GIS (MTCU 70303)								
CAAT	66.7%	75.0%	63.6%	63.6%	66.7%	41.7%	100.0%	N/A	N/A
Student Experience – GIS (MTCU 70305)								
CAAT	88.9%	92.3%	100.0%	78.9%	92.3%	79.2%	100.0%	N/A	75.0%

7. Analysis of Competition

GIS OCGCs are currently only offered at three CAATs under the MTCU codes 70301, 70303 & 70305.

These programs emphasize traditional GIS training focusing on using software, such as ArcGIS Pro, to generate maps and visualizations. Cartography, remote sensing and image analysis, spatial analysis, GIS programming and Web GIS applications are common subjects covered in the currently active programs.

DC's proposed GIS program will differentiate itself under the scope of a data analytics lens and will be the only program in the system with this focus. It will focus on spatial data analytics by incorporating traditional data analytics with GIS software. This would involve examining an organizational problem, collecting spatial and non-spatial data, managing the data and providing insights through maps and dashboard visualizations.

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[57] The Student Experience Survey is a voluntary and confidential survey of Full-Time DC Students administered by the Ontario College Application Service during the Winter semester. 22 of the publicly funded CAATs participate in the Student Experience Survey.

8.   **Target Market**

The target market for the proposed program includes domestic students possessing an Ontario College Diploma, Ontario College Advanced Diploma or degree in any discipline. Basic experience in introductory programming in Python or JavaScript and technical/professional writing experience is recommended.

9. Operating Revenue and Expenses

The following tables summarize the net contribution for the proposed Geographic Information Systems for Data Analytics, Ontario College Graduate Certificate program.

Student Enrolment (YR 1)	2026-27 Projection	2027-28 Projection	2028-29 Projection	2029-30 Projection	2030-31 Projection
Projected enrolment (domestic)	20	25	30	40	60
Projected enrolment (international)	-	-	-	-	-
Total	**20**	**25**	**30**	**40**	**60**

Net Contribution	2026-27 Projection	2027-28 Projection	2028-29 Projection	2029-30 Projection	2030-31 Projection
Total Direct Program Expenses	151,803	156,357	161,048	165,879	326,378
Total Revenue for Program	194,922	243,653	292,383	389,844	584,766
Net Contribution $	**43,119**	**87,295**	**131,335**	**223,965**	**258,388**
Net Accumulated Contribution / (Deficit)	43,119	130,414	261,750	485,714	744,102
Net Contribution - % of Gross Revenue	22.1%	35.8%	44.9%	57.4%	44.2%
Target Net Contribution	**Breakeven**	**35.0%**	**35.0%**	**35.0%**	**35.0%**
Capital Requirement	0	0	0	0	0

Revenue	2026-27 Projection	2027-28 Projection	2028-29 Projection	2029-30 Projection	2030-31 Projection
Tuition Fees per <u>academic year</u> (domestic)	5,758	5,758	5,758	5,758	5,758
Set-Aside Fee Removed (domestic)	576	576	576	576	576
Tuition Fee realized by college (domestic)	5,182	5,182	5,182	5,182	5,182
Tuition Fees per <u>academic semester</u> (international)	-	-	-	-	-
Set-Aside Fee Removed (international)	-	-	-	-	-
International Student Recovery	-	-	-	-	-
International Commission Recruitment	-	-	-	-	-
Tuition Fee realized by college (international)	-	-	-	-	-
Total Tuition Fees (domestic)	103,644	129,555	155,466	207,288	310,932
Total Tuition Fees (international)	-	-	-	-	-
Other Revenue (Contract Training)	-	-	-	-	-

35

Revenue	2026-27 Projection	2027-28 Projection	2028-29 Projection	2029-30 Projection	2030-31 Projection
Total Other Revenue	-	-	-	-	-
Program Wtd Funding Unit (domestic only)	1.10	1.10	1.10	1.10	1.10
Grant - MTCU Operating (Assume $4149/wfu)	91,278	114,098	136,917	182,556	273,834
Total Revenue (domestic)	**194,922**	**243,653**	**292,383**	**389,844**	**584,766**
Total Revenue (international)	**-**	**-**	**-**	**-**	**-**

Expenditures	2026-27 Projection	2027-28 Projection	2028-29 Projection	2029-30 Projection	2030-31 Projection
Salaries - Faculty (FT)	85,000	87,550	90,177	92,882	95,668
Salaries - Co-ordinator Allowance	0	0	0	0	0
Salaries - PT Teaching	36,960	38,069	39,211	40,387	173,959
Salaries - PL Teaching	0	0	0	0	0
Salaries - Sessional Teaching	0	0	0	0	0
Contract Teaching	0	0	0	0	0
Total Teaching Salaries	**121,960**	**125,619**	**129,387**	**133,269**	**269,627**
Support Staff	0	0	0	0	0

Expenditures	2026-27 Projection	2027-28 Projection	2028-29 Projection	2029-30 Projection	2030-31 Projection
Total Academic Support Costs	**0**	**0**	**0**	**0**	**0**
Benefits - Faculty - FT 27.5%	23,375	24,076	24,799	25,542	26,309
Benefits - Faculty - PT 17.5%	6,468	6,662	6,862	7,068	30,443
Benefits - SS (FT) 31.5%	0	0	0	0	0
Total Employee Benefits	**29,843**	**30,738**	**31,660**	**32,610**	**56,752**
Total Labour	**151,803**	**156,357**	**161,048**	**165,879**	**326,378**
Instructional Supplies	0	0	0	0	0
Instructional Other Costs	0	0	0	0	0
Field Work	0	0	0	0	0
Membership and Dues	0	0	0	0	0
Professional Development	0	0	0	0	0
Travel/accommodation/ meals	0	0	0	0	0
Promotion/Public relations	0	0	0	0	0
Maintenance- Equipment	0	0	0	0	0

37

Agenda Page 139

Expenditures	2026-27 Projection	2027-28 Projection	2028-29 Projection	2029-30 Projection	2030-31 Projection
Telecommunications	0	0	0	0	0
Software Costs	0	0	0	0	0
Contracted Services	0	0	0	0	0
Rental	0	0	0	0	0
Total Other Expenditure	**0**	**0**	**0**	**0**	**0**

Discussion Items

The following items do not require a decision from the Board and are presented for interest and to keep the Board informed about key issues.

Public Report

Report Number: BOG-2025-46

To: Board of Governors

From: Elaine Popp, President

Date of Report: April 25, 2025

Date of Meeting: May 7, 2025

Subject: Strategic Mandate Agreement 2020-2025 (SMA3) Year Five Report Back

1.   Purpose

To provide the Board of Governors with an update on the submission of the final Year Five report back for SMA3 to the Ministry of Colleges, Universities, Research Excellence and Security (MCURES).

2.   Recommendation

This report is being presented for information only.

3.   Background

In August 2020, Durham College (DC) and the Ministry of Colleges and Universities executed DC's Strategic Mandate Agreement 2020-25 (SMA3). This agreement emphasized the College's performance against 10 metrics that would result in outcomes-based funding. SMA3 is a key component of the Ministry's accountability framework for the postsecondary education system supporting differentiation and improved performance outcomes by:

- Promoting accountability through transparency and improved performance outcomes;
- Creating an appropriate balance between accountability and reporting;
- Incentivizing colleges to redirect resources and invest in initiatives that result in positive economic outcomes;
- Encouraging alignment of postsecondary education programming with labour market outcomes; and
- Incentivizing differentiation and specialization to support increased efficiencies.

Based on these objectives, the Ministry established mechanisms to assess and assign funding based on differentiated improvement:

- Establishment of priority areas and metrics:
  Metrics were established across three priority areas: *Skills & Job Outcomes, Economic & Community Impact,* and *Productivity, Accountability & Transparency.* Of these, the performance of 10 metrics under *Skills & Job Outcomes,* and *Economic & Community Impact* were to affect funding allocations. Two reporting metrics were identified in the category *Productivity, Accountability & Transparency,* which were not tied to funding. The 10 funding-related performance metrics included in SMA3 were to be activated in different years over the five-year period from 2020-21 to 2024-2025.

- Performance measurement:
  Institutions are measured against themselves. Targets are based on the institution's historical data that are measured as per established criteria. A band of tolerance is established for each metric to establish a minimum threshold to achieve 100 per cent notional allocation for the given metric.

- Differentiation weighting:
  Institutions assign proportional weightings for each metric for each of the five years over the 2020-2025 period.

- Outcomes evaluation:
  Performance is evaluated using a pass/fail approach with bands of tolerance and scaling for under-achievement.

Initially, SMA3 aimed to increase the proportion of funding allocated through the Differentiation Envelope from 25 per cent in Year One, to 60 per cent by Year Five, based on performance. However, due to COVID-19 impacts, the Ministry delayed the activation of the performance-based funding for Year One (2020-21), Year Two (2021-22) and Year Three (2022-23). Performance funding was activated in Year Four (2023-24) at a planned system-wide proportion of 10 per cent, increasing to 25% for Year Five (2024-25).

4. Discussion/Options

Each year, an annual evaluation and summary of the Strategic Mandate Agreement (SMA) has been provided to the Board. This report marks the final evaluation under SMA3. In line with Ministry guidelines, Durham College submitted Stage One of the SMA3 Year Five Annual Evaluation on February 14, 2025.

As part of this process, all ten performance metrics were carefully reviewed and validated. We are pleased to report that Durham College met or exceeded the minimum performance thresholds for all metrics, qualifying for the full amount of performance-based funding.

The Stage One Metric and Data Workbooks for Year Five were originally distributed by the Ministry on January 17, 2025, with a submission deadline of February 14, 2025. No Stage Two will be required, since weightings and targets for the following year will be addressed in SMA4. The Ministry is expected to return final workbooks, including notional funding allocations, on May 12, 2025.

Additionally, on February 27, 2024, the Ministry confirmed that performance-based funding would represent 25% of the total operating grant for Year Five (2024–25). The stop-loss mechanism—which caps potential funding reductions at 95% of each metric's allocation—remains in place. However, Durham College did not require the stop-loss provision, as all performance targets were successfully met or exceeded.

Year Five	2024-25	
Metric Name	**Metric Weighting**	**Target Achievement**
Graduate Employment Rate in a related field	5.00%	112.4%
Institutional Strength/Focus	25.00%	143.1%
Graduation Rate	5.00%	103.4%
Community/Local Impact of Student Enrolment	5.00%	112.1%
Economic Impact (Institution-specific)	5.00%	157.0%
Graduate Employment Earnings	5.00%	114.7%
Experiential Learning	25.00%	112.7%
Revenue Attracted from Private Sector Sources	15.00%	162.9%
Institution-Specific (Apprenticeship-related)	5.00%	100.9%
Skills and Competencies	5.00%	100.0%

SMA3 (2020–2025) Summary – Yearly Target Achievement
Over the course of the five-year agreement, Durham College successfully met the majority of its performance targets. Allowable thresholds were not met on six out of 43 targets over the course of five years; however, this resulted in only a minimal funding loss in 2023–24, the first year performance-based funding was activated.

SMA3	Target Achievement				
Metric Name	2020-21	2021-22	2022-23	2023-24	2024-25
Graduate Employment Rate in a related field	104%	92%	112%	110%	112%
Institutional Strength/Focus	107%	118%	125%	136%	143%
Graduation Rate	99%	101%	99%	104%	103%
Community/Local Impact of Student Enrolment	120%	107%	105%	94%	112%
Economic Impact (Institution-specific)	137%	113%	117%	112%	157%
Graduate Employment Earnings		114%	103%	108%	115%
Experiential Learning		133%	143%	142%	113%
Revenue Attracted from Private Sector Sources		101%	94%	106%	163%
Institution-Specific (Apprenticeship-related)			99%	101%	101%
Skills and Competencies			100%	100%	100%

5. Financial/Human Resource Implications

Failure to meet SMA3 metrics results in a proportional loss of performance-based funding, when performance-based funding is activated. Durham College may benefit financially from the reallocation of performance-based funding where other Colleges do not meet their targets.

6. Implications for the Joint Campus Master Plan

There are no implications for the joint campus master plan.

7. Implications for Ontario Tech University

There are no implications for Ontario Tech University.

8. Relationship to the Strategic Plan/Business Plan

This report relates to the "Our Students" pillar of the Strategic Plan, and the goal to provide students with the best possible learning experiences by delivering high quality programs and providing experiential opportunities to support strong employment outcomes. It also directly relates to the "Our Work" pillar of the strategic plan, which emphasizes leadership in teaching and learning while responsibly managing resources, and ensuring good governance.
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Report Number: BOG-2025-47

To: Board of Governors

From: Elaine Popp

Date of Report: April 25, 2025

Date of Meeting: May 7, 2025

Subject: Strategic Mandate Agreement 2025-2030 (SMA4) Engagement Process

1.   Purpose

Durham College (DC) has completed the requirements for the interim high-level Strategic Management Agreement for 2025-30 (SMA4) with the Ministry of Colleges, Universities, Research Excellence and Security (MCURES) effective April 1, 2025. This report provides a summary of the ongoing bilateral engagement process and its current status, as DC works towards execution of the final SMA4 by June 30, 2025.

2.   Recommendation

This report is being presented for information only.

3.   Background

On August 9, 2024, the Ministry announced the commencement of SMA4 bilateral negotiations. Key messages are as follows:

Funding stability and enrolment:
- The corridor floor has been reduced by an amount equal to domestic STEM enrolment in Year One and potentially Year Two, offering additional protection from corridor-related funding reductions.
- Performance-based funding remains at 25% of the total operating grant during Years One and Two, with the existing stop-loss protection in place when performance falls below 95%.
- Starting in Year Three, performance-based funding will increase by 5% annually, reaching 40% by Year Five, pending the outcome of a broader funding model review.
- A new priority to maintain and increase enrolment in science, technology, engineering and math (STEM) programs was introduced. MCURES sought

institutional input for labour market demand for STEM graduates and barriers to growing STEM enrolment.

Metrics:
The number of performance metrics has been streamlined from ten to eight. Most metrics will exclude international students to reduce volatility stemming from federal international study permit application caps, with the exception of graduation rate. Metrics remain aligned with two priorities areas: (1) skills and job outcomes and (2) economic and community impact. Performance metrics for SMA4 are as follows:

1. Graduate Employment Rate in a Related Field
2. Graduation Rate
3. Graduate Employment Earnings
4. Experiential Learning
5. Community/Local Impact
6. Institutional Strength/Focus
7. Investment and Innovation
8. Institution Specific

New reporting accountabilities:
A new Efficiency, Accountability, and Transparency priority area will account for 5% of total operating funding, tied to timely submission of required data and reports, institutional attestations around research security, participation in and reporting on efficiency metrics, and a standardized skills and competencies assessment.

DC's preparation and engagement:
In Fall 2024, significant work was undertaken to map Durham College's STEM programs using Statistics Canada's Classification of Instructional Programs (CIP) codes, in alignment with a federal review tied to Post-Graduate Work Permit (PGWP) eligibility. This mapping supported the completion of the "Maintaining and Increasing STEM Enrolment" workbook, which was submitted to MCURES on November 22, 2024. On December 4, 2024, DC representatives participated in a bilateral meeting with MCURES, which included an overview of DC's strategic priorities and financial position, a presentation of DC's STEM template, a Q&A session on the SMA4 metrics, and a brief campus tour showcasing key initiatives.

On January 10, 2025, DC submitted drafts of its SMA4 Metric and Data Workbook and SMA4 Agreement to MCURES. These documents include the following key components:

- Institutional Metrics: DC recommended two institutional-specific metrics — Apprenticeship Completion Rate and Revenue Generated from the Private Sector.
- Metric Weightings: Proposed weightings for all eight SMA4 metrics range from the minimum 5% to the maximum 25%, based on historical and projected performance.
- Institutional Strength/Focus: The metrics workbook outlines a recommended cluster of programs for this metric, which is largely consistent with SMA3.
- Agreement Narrative: The SMA4 Agreement includes a DC institutional profile and outlines strategies for achieving each of the eight metrics.

Sustainability measures

On March 24, 2025, MCURES issued a memo outlining new STEM allocations and the implementation of next steps to finalize the SMA4. For DC, this results in an increase of 85.29 Weighted Funding Units (WFUs) to the corridor midpoint. The corridor floor will remain the same as in SMA3 (notwithstanding the corridor floor protection described below). The Ministry will monitor accountability for STEM funding through the SMA4 Annual Evaluation process, which will require an annual report on the use of funds, data monitoring, and an annual attestation related to the future development of commercialization metrics.

As required by MCURES, a high-level SMA4 agreement was signed and returned to MCURES by March 31, 2025, as a prerequisite for receiving the STEM investment. MCURES signed and returned the agreement on April 7, 2025.

4. Discussion/Options

On April 24, 2025, the Ministry communicated requirements for finalizing the SMA4. At this time, DC has been provided with the pre-populated appendices that will be attached to the interim SMA4. Additionally, the updated SMA4 Metric and Data Workbook was returned with additional content for review.

DC will now undertake a thorough review process to ensure all aspects of the documents are complete and accurate. Final timelines are as follows:

- May 16, 2025: Institutions submit final appendices and workbooks to MCURES.
- May 30, 2025: Ministry issues final appendices for signature.
- June 16, 2025: Institutions return signed appendices.
- June 30, 2025: MCURES countersigns the SMA4 agreements.

5. Financial/Human Resource Implications

Durham College will receive additional financial support through an adjustment to the corridor midpoint. DC continues to maintain domestic enrolment levels within its corridor, and as such, we do not anticipate any negative financial impacts related to corridor funding.

As SMA4 performance-based funding is tied to annual performance in eight institutional metrics, the attainment level for each metric will directly influence the portion of funding received. As we work toward achieving and exceeding these targets, additional capital investments and/or operational resources may be required to support related improvement strategies. These needs will be considered as part of future budget and planning processes.

6. Implications for the Joint Campus Master Plan

There are no implications for the joint campus master plan.

7. Implications for Ontario Tech University

There are no implications for Ontario Tech University.

8. Relationship to the Strategic Plan/Business Plan

This report relates to the "Our Students" pillar of the Strategic Plan, and the goal to provide students with the best possible learning experiences by delivering high quality programs and providing experiential opportunities to support strong employment outcomes. It also directly relates to the "Our Work" pillar of the strategic plan, which emphasizes leadership in teaching and learning while responsibly managing resources, and ensuring good governance.

Report Number: BOG-2025-48

To: Board of Governors

From: Dr. Jean Choi, Vice President, Academic and Students

Date of Report: April 21, 2025

Date of Meeting: May 7, 2025

Subject: Annual Academic Quality Assurance Activities

1.   Purpose

As part of Durham College's (DC) commitment to academic quality assurance, each program, or program cluster, undergoes a cyclical Comprehensive Program Review (CPR) every five to seven years as per DC's Academic Program Review and Renewal – Quality Assurance policy (ACAD-105). This report is intended to provide the Board of Governors with an overview of our compliance with this requirement.

2.   Recommendation

That the Board of Governors receives the CPR summary report for information. The report includes the 2024-2025 CPR roster of programs that are on track for completion by summer 2025, as well as the programs currently in process of completing CPRs in the upcoming academic year as per the 2025-2026 CPR roster.

3.   Background

All Ontario college programs must conform to the Minister's Binding Policy Directive - Framework for Programs of Instruction. This framework requires that colleges establish "mechanisms for the review of their programs of instruction to ensure ongoing quality, relevance and currency". DC is committed to offering quality programming and to ensuring exceptional educational experiences for its students.

To achieve these objectives and ensure all requirements laid out by the Ministry of Colleges, Universities, Research Excellence and Security (MCURES) are met, DC has implemented rigorous quality assurance processes.

To assess and monitor program quality, academic rigor and continued market relevance, each postsecondary program undergoes a detailed CPR every five to seven years, as outlined in policy. This cyclical review determines the program:

- Aligns with the college's strategic and academic plans;
- Continues to contribute to the existing program mix;
- Remains responsive to economic and community needs, and meets student and employer expectations;
- Supports transition to further study, where appropriate;
- Delivers current and innovative educational best practices, experiential and/or work-integrated learning experiences, and alternate delivery modes as appropriate, to enhance student success and satisfaction;
- Meets or exceeds the MCURES Program Standards, where they exist;
- Meets or exceeds industry or program accreditation standards, where applicable;
- Fulfills the expectations of the [Ontario College Quality Assurance Service (OCQAS)](#) and the [Postsecondary Education Quality Assessment Board (PEQAB)](#), where applicable, and meets the standards and requirements as outlined in the [College Quality Assurance Audit Process (CQAAP)](#); and
- Meets the objectives of Durham College's Academic Program Review and Renewal – Quality Assurance policy and procedure (ACAD-105).

The CPR process is thorough and rigorous, leveraging program performance information, Annual Program Review (APR) reports, stakeholder feedback and external assessment(s), where relevant. The program review team compiles a final report developed from critical analysis and reflection, where areas of strength are highlighted, opportunities are identified and areas for improvement are shared through recommendations in an action plan. Development of the report is supported by the manager, Academic Quality Assurance, and the dean, Teaching, Learning and Academic Quality, in the Centre for Teaching and Learning.

The final report is reviewed and approved by the Executive Dean for the program and the Vice President, Academic and Students. Highlights of the CPR are presented to DC's College Advisory Council by the program coordinator. The final report is posted to the DC intranet, ICE, and the manager, Academic Quality Assurance tracks completion of the recommendations identified in the action plan.

4.   Discussion/Options

4.1   Completed Reviews – 2024-2025

Programs listed below began the CPR process in winter 2024 and are on track for submission of the final report and recommendations in June 2025. Presentations to the College Advisory Council will take place during the 2025-2026 academic year.

Cristina Italia, Faculty of Business and Information Technology
- Cosmetic Techniques and Management, Ontario College Diploma (CTMG)
- Esthetician – Spa Management, Ontario College Diploma (ESMG)
- International Business Management, Ontario College Graduate Certificate (INTB/INTW)
- Office Administration – General, Ontario College Certificate (OFAD)
- Office Administration – Executive, Ontario College Diploma (OFEX/OFEF)
- Office Administration – Health Services, Ontario College Diploma (OFHS/OFHF)
- Supply Chain and Operations Management – Business Administration, Ontario College Advanced Diploma (BSOM/BSOI/BSOC)
- Supply Chain and Operations – Business, Ontario College Diploma (SCOP/SCTU)

Tania Clérac, Faculty of Hospitality and Horticultural Science
- Culinary Skills, Ontario College Certificate (CSK)
- Culinary Management, Ontario College Diploma (CMGT)

Tania Clérac, Faculty of Science and Engineering Technology
- Architectural Technology, Ontario College Advanced Diploma (ARHY)
- Electromechanical Engineering Technology, Ontario College Advanced Diploma (EMTY/EMTC)

Dr. Rebecca Milburn, Faculty of Health Sciences
- Occupational Therapist Assistant and Physiotherapy Assistant, Ontario College Diploma (OTPA)
- Practical Nursing, Ontario College Diploma (PNII/PNFL/PNIE/PNPW)

Nora Simpson, Faculty of Social & Community Services
- Conflict Resolution and Mediation, Ontario College Graduate Certificate (CRMD)

Tania Clérac, Faculty of Skilled Trades and Apprenticeship
- Carpentry – Building Construction Technician, Ontario College Diploma (BDCT/BDCC)
- Trades Fundamentals, Ontario College Certificate (TRDE)

4.2 In–Progress Reviews - 2025-2026

The programs listed below will launch their CPR process in fall 2025. Final reports and recommendations are scheduled for completion and submission by June 2026. Programs will present an analysis of their data and action items to the College Advisory Council during the 2026-2027 academic year.

Cristina Italia, Faculty of Business and Information Technology
- Artificial Intelligence Analysis, Design and Implementation, Ontario College Diploma (AIDI/AIDW/AIFL)
- Data Analytics for Business Decision Making, Ontario College Graduate Certificate (DATA/DATW/DAFL)
- Human Resources – Business, Ontario College Diploma (HRM/HRTU)
- Human Resources – Business and Co-op, Ontario College Advanced Diploma (BHRM/BHRC)

Tania Clérac, Faculty of Science and Engineering Technology
- Civil Engineering Technician, Ontario College Diploma (CETC/CTCC)
- Civil Engineering Technology, Ontario College Advanced Diploma (CETY/CTYC)

Cristina Italia, Faculty of Media, Art and Design
- Broadcasting, Ontario College Diploma (BRCM)
- Film and Motion Design - Media Fundamentals, Ontario College Diploma (MFUN)

Dr. Rebecca Milburn, Faculty of Health Sciences
- Fitness and Health Promotion, Ontario College Diploma (FITK/FIT)

Nora Simpson, Faculty of Social and Community Services
- Early Childhood Education, Ontario College Diploma (ECEB/ECE)

Tania Clérac, Faculty of Skilled Trades and Apprenticeship
- Carpentry and Renovation Technician, Ontario College Diploma (RENO/RENC)
- Crane Operation, Rigging and Construction Techniques, Ontario College Certificate (CORC)
- Power Engineering Techniques - Fourth Class, Ontario College Certificate (PETN)

5.   Financial/Human Resource Implications

CPR recommendations that have financial implications such as the hiring of additional faculty, the acquisition of capital, and/or the refurbishing/retrofitting of teaching space, are presented for approval through the annual budget process.

6.   Implications for the Joint Campus Master Plan

There are no implications for the joint campus master plan.

7.   Implications for Ontario Tech University

During the CPR process, each program reviews existing or considers pathway opportunities between Ontario Tech University (OTU) and DC. Communication with the appropriate OTU counterpart is an important aspect of proposed program changes which affect existing or create new pathways.

8.   Relationship to the Strategic Plan/Business Plan/Academic Plan

This report relates to the "Our Students" and "Our Work" pillars of the Strategic Plan. The CPRs support to educate and inspire students to realize success in their careers and communities, as well as enabling DC to be a leader in teaching and learning while responsibly managing resources, ensuring good governance and strategically investing in the future.

Goal one of the Academic Plan is addressed: CPR supports continued exceptional quality in our academic programs by meeting the objective to review and renew high-quality programs that reflect evolving societal and workforce needs.

Information Items

The following items are presented for information only with no intent to discuss unless there are questions.

![Durham College - Success Matters logo]

Public Report

Report Number: **BOG-2025-49**

To: **Board of Governors**

From: **Elaine Popp, President**

Date of Report: **April 28, 2025**

Date of Meeting: **May 7, 2024**

Subject: **DC-Ontario Tech Academic Pathways Report 2024-25**

1. Purpose

To provide the Board of Governors with an annual update on the Durham College (DC)-University of Ontario Institute of Technology (Ontario Tech) academic pathways.

2. Recommendation

This report is being presented for information only.

3. Background

In 2003, the Ontario Tech (*prior years' reference UOIT*) was established as a science, technology, engineering and manufacturing university. Included in the Act proclaiming Ontario Tech, was the mission to facilitate student transition between college-level programs and university-level programs. To that end, Ontario Tech collaborates with DC, and through their respective strategic plans, DC and Ontario Tech are committed to providing students with a transparent and effortless credit transfer system. This collaboration is consistent with the vision of the Ministry of Colleges, Universities, Research Excellence and Security (MCURES), which articulates the need for increased pathways between colleges and universities, and identifies the development of a comprehensive and transparent credit transfer system as a high priority for Ontarians.

Each year, DC and Ontario Tech collaborate on data exchange and analysis to continue to assess the pathways framework and the mobility of students between the two institutions.

4.   Discussion/Options

This report presents the update for student mobility between DC and Ontario Tech.

For the reporting year 2024-25:

- 1,608 students in their first year of studies at DC declared prior postsecondary experience at an Ontario institution other than DC.

- Of these 1,608 students, 358 students in their first year of studies at DC had prior Ontario Tech experience. This is a slight increase from last year (46 students); however, this number is still recovering from 2022 when there were 396 students with a prior Ontario Tech experience.

- Of these 358 students, 53.6 per cent (192 students) declared their prior verified Ontario Tech experience on their admission application, an almost 3% increase from 2022. The remaining 166 did not declare their prior Ontario Tech experience.

- Of the 192 students who declared prior verified Ontario Tech postsecondary experience, 8.3 per cent (16 students) were enrolled in one-year certificate programs, 60.4 per cent (116 students) in diploma or advanced diploma programs, 29.2 per cent (56 students) in graduate certificate programs, and 2.1 per cent (4 students) in a degree program.

For the reporting year 2024-25:

- 771 students in their first year of studies at Ontario Tech declared prior postsecondary experience at an Ontario college.

- Of these 771 students, 420 students who started their studies at Ontario Tech had prior DC experience, a 31% increase since 2022.

- Of these 420 students, 80.1 per cent (339 students) declared their prior verified DC experience on their admission application, a 2.2% increase since 2022. The remaining 81 students did not declare their prior DC experience.

- Of the 339 students who declared prior DC experience, 66.4 per cent (225 students) had graduated from DC, and 23.3 per cent (79 students) were enrolled in embedded program while 10.3 per cent (35 students) had partial experience. Of the 225 students who had graduated from DC, 72.4 per cent (163 students) had graduated from diploma programs, 17.3 per cent (39 students) had graduated from advanced diploma programs, 8.4 per cent (19 students) had graduated from certificate programs, and 1.8 per cent (4 students) had graduated from graduate certificate programs.

The attached *DC-Ontario Tech Academic Pathways Report – Detailed*, further presents 2022-23 and 2023-24 comparisons to 2024-25 data, identifies specific programs of strong interest at each institution, and provides a list of pathways and articulation agreements between the two institutions.

5. Financial/Human Resource Implications

Capital and/or other resources needed to implement improvement strategies are considered when making decisions about capital expenditures. Efforts designed to promote and support the student mobility through integrated curriculum development and other relevant initiatives, have been - and will continue to be - incorporated into future budget and planning decisions.

6. Implications for the Joint Campus Master Plan

There are no implications for the joint campus master plan.

7. Implications for Ontario Tech University

Both DC and Ontario Tech are committed to promoting student mobility. Collaborative data exchange and analysis may provide both DC and Ontario Tech the opportunity to identify opportunities for potential articulation agreements and assess success of transfer students from their respective institution.

8. Relationship to the Strategic Plan/Business Plan

This report relates to the "Our Students" pillar of the Strategic Plan, and the goal to provide students with the best possible learning experiences by continuing to assess various aspects of student learning experiences, and the related graduate and employment outcomes.

Bill S-211: Forced Labour and Child Labour in Supply Chains Act

Annual Compliance Report
April 1, 2024 – March 31, 2025

Preamble

In accordance with the *Fighting Against Forced Labour and Child Labour in Supply Chains Act* (Bill S-211), this report is submitted as part of our organization's annual compliance requirements. The purpose of this report is to outline the measures that Durham College has taken during the preceding financial year to prevent and reduce the risk of forced labour and child labour within our supply chains and business operations.

Durham College acknowledges the critical importance of upholding human rights and promoting ethical labour practices across all tiers of our value chain. We are committed to transparency, accountability, and continuous improvement in identifying, assessing, and addressing risks related to forced and child labour. This report reflects our ongoing efforts to align our operations with both Canadian legislative expectations and international human rights standards.

Durham College engages in extensive procurement activities, adhering to public procurement regulations and ethical sourcing practices. As such, Durham College has updated its competitive procurement templates and standard contract language to require suppliers/vendors bidding to attest that their goods and services are not the result of, and in no way involve, forced labour or child labour.

In accordance with the requirements of the Act, and in particular section 11 thereof, I attest that I have reviewed the information contained in the report for the entity or entities listed above. Based on my knowledge, and having exercised reasonable diligence, I attest that the information in the report is true, accurate and complete in all material respects for the purposes of the Act, for the reporting year listed above.

_____
Dr. Elaine Popp
Durham College President
Dated at Oshawa, Ontario on May 7, 2025

I have the authority to bind Durham College.

Reporting for entities

1. What steps has the entity taken in the previous financial year to prevent and reduce the risk that forced labour or child labour is used at any step of the production of goods in Canada or elsewhere by the entity or of goods imported into Canada by the entity? (Mandatory)

- Mapping activities

- Conducting an internal assessment of risks of forced labour and/or child labour in the organization's activities and supply chains

- Developing and implementing due diligence policies and processes for identifying, addressing and prohibiting the use of forced labour and/or child labour in the organization's activities and supply chains

- Engaging with supply chain partners on the issue of addressing forced labour and/or child labour

4. Please provide additional information describing the steps taken (if applicable) (3,000 character limit).

- We compiled a comprehensive list of all suppliers from whom we directly purchase goods outside of Canada and reviewed this for potential risks related to forced and child labour. No risks were identified.
- All new suppliers are now required to formally confirm their commitment to ethical sourcing practices, with a specific focus on preventing forced and child labour. We've implemented a process to collect written attestations from these suppliers, confirming that they do not engage in or support such practices in any part of their operations or supply chains.
- We have actively collaborated with industry peers including other universities and relevant associations to share best practices, take part in ethical sourcing initiatives, and contribute to working groups focused on preventing forced and child labour in supply chains.
- We updated the College's procurement policies and procedures to directly address the risks of forced and child labour in the supply chain. Ethical sourcing requirements are now built into every stage of the procurement process from evaluating and selecting suppliers to managing contracts to help ensure our purchasing practices support responsible and ethical standards.

5. Does the entity currently have policies and/or due diligence processes in place related to forced labour and/or child labour? (Mandatory)

- Yes

5.1 If yes, which elements of the policies and/or due diligence process has the entity implemented in relation to forced labour and/or child labour? (Mandatory)

- Embedding responsible business conduct into policies and management systems

- Identifying and assessing potential and actual adverse impacts in operations, supply chains and business relationships

- Tracking implementation and results

6. Has the entity identified parts of its activities and supply chains that carry a risk of forced labour or child labour being used? (Mandatory)

- Yes, we have identified parts of our activities and/or supply chains that carry risks to the best of our knowledge and will continue to identify emerging risks.

6.1 If yes, has the entity identified forced labour or child labour risks related to any of the following aspects of its activities and supply chains? Select all that apply. (Mandatory)

- The sector or industry it operates in

- The types of products it produces or imports

- The locations of its activities, operations or factories

- The types of products it sources

- The raw materials or commodities used in its supply chains

- Tier one (direct) suppliers

- Tier two suppliers

- Tier three suppliers

- Suppliers further down the supply chain than tier three

- The use of outsourced, contracted or subcontracted labour

- The use of migrant labour

- The use of forced labour

- The use of child labour

- None of the above

7. Has the entity identified forced labour or child labour risks in its activities and supply chains related to any of the following sectors and industries? Select all that apply. (Mandatory)

- Agriculture, forestry, fishing and hunting
    - o Crop production
    - o Animal production and aquaculture
    - o Forestry and logging
    - o Fishing, hunting and trapping
    - o Support activities for agriculture and forestry
- Mining, quarrying, oil and gas extraction
    - o Oil and gas extraction
    - o Mining and quarrying (except oil and gas)
    - o Support activities for mining, and oil and gas extraction
- Utilities
- Construction
    - o Construction of buildings
    - o Heavy and civil engineering construction
    - o Specialty trade contractors
- Manufacturing
    - o Food manufacturing
    - o Beverage and tobacco product manufacturing
    - o Textile mills
    - o Textile product mills
    - o Apparel manufacturing
    - o Leather and allied product manufacturing
    - o Wood product manufacturing
    - o Paper manufacturing
    - o Printing and related support activities
    - o Petroleum and coal product manufacturing

- o Chemical manufacturing

- o Plastics and rubber products manufacturing

- o Non-metallic mineral product manufacturing

- o Primary metal manufacturing

- o Fabricated metal product manufacturing

- o Machinery manufacturing

- o Computer and electronic product manufacturing

- o Electrical equipment, appliance and component manufacturing

- o Transportation equipment manufacturing

- o Furniture and related product manufacturing

- o Other manufacturing

- Wholesale trade

  - o Farm product merchant wholesalers

  - o Petroleum, petroleum products, and other hydrocarbons merchant wholesalers

  - o Food, beverage and tobacco merchant wholesalers

  - o Personal and household goods merchant wholesalers

  - o Motor vehicle and motor vehicle parts and accessories merchant wholesalers

  - o Building material and suppliers merchant wholesalers

  - o Machinery, equipment and supplies merchant wholesalers

  - o Business-to-business electronic markets, and agents and brokers

  - o Other merchant wholesalers

- Retail trade

  - o Motor vehicle and parts dealers

  - o Building material and garden equipment and supplies dealers

  - o Food and beverage retailers

  - o Furniture, home furnishings, electronics and appliances retailers

  - o General merchandise retailers

- Health and personal care retailers

- Gasoline stations and fuel vendors

- Clothing, clothing accessories, shoes, jewelry, luggage and leather goods retailers

- Sporting goods, hobby, musical instrument, book, and other retailers

- Transportation and warehousing
  - Air transportation
  - Rail transportation
  - Water transportation
  - Truck transportation
  - Transit and ground passenger transportation
  - Pipeline transportation
  - Scenic and sightseeing transportation
  - Support activities for transportation
  - Postal service
  - Couriers and messengers
  - Warehousing and storage

- Information and cultural industries
  - Motion picture and sound recording industries
  - Publishing industries
  - Broadcasting and content providers
  - Telecommunications
  - Computing infrastructure providers, data processing, web hosting, and related services
  - Web search portals, libraries, archives, and all other information services

- Finance and insurance
  - Monetary authorities - central bank
  - Credit intermediation and related activities

- o Securities, commodity contracts, and other financial investment and related activities

- o Insurance carriers and related activities

- o Funds and other financial vehicles

- Real estate and rental and leasing

  - o Real estate

  - o Rental and leasing services

  - o Lessors of non-financial intangible assets (except copyrighted works)

- Professional, scientific and technical services

- Management of companies and enterprises

- Administrative and support, waste management and remediation services

  - o Administrative and support services

  - o Waste management and remediation services

- Educational services

- Health care and social assistance

  - o Ambulatory health care services

  - o Hospitals

  - o Nursing and residential care facilities

  - o Social assistance

- Arts, entertainment and recreation

  - o Performing arts, spectator sports and related industries

  - o Heritage institutions

  - o Amusement, gambling and recreation industries

- Accommodation and food services

  - o Accommodation services

  - o Food services and drinking places

- Other services (except public administration)

  - o Repair and maintenance

  - o Personal and laundry services

- - Religious, grant-making, civic, and professional and similar organizations
  - Private households
- Public administration
  - Federal government public administration
  - Provincial and territorial public administration
  - Local, municipal and regional public administration
  - Indigenous public administration
  - International and other extra-territorial public administration
- <mark>None of the above</mark>
- Other, please specify

8. Please provide additional information on the parts of the entity's activities and supply chains that carry a risk of forced labour or child labour being used, as well as the steps that the entity has taken to assess and manage that risk (if applicable) (3,000 character limit).

After a thorough review of our operations and supply chains, no areas were identified as carrying a risk of forced labour or child labour. We remain committed to ethical sourcing and fair labour practices and will continue to monitor our activities to ensure compliance with all applicable labour standards.

9. Has the entity taken any measures to remediate any forced labour or child labour in its activities and supply chains? (Mandatory)

- Not applicable, we have not identified any forced labour or child labour in our activities and supply chains.

10. Has the entity taken any measures to remediate the loss of income to the most vulnerable individuals and families that results from measures taken to eliminate the use of forced labour or child labour in its activities and supply chains? (Mandatory)

- Not applicable, we have not identified any loss of income to vulnerable families resulting from measures taken to eliminate the use of forced labour or child labour in our activities and supply chains.

11. Does the entity currently provide training to employees on forced labour and/or child labour? (Mandatory)

- No

12. Does the entity currently have policies and procedures in place to assess its effectiveness in ensuring that forced labour and child labour are not being used in its activities and supply chains? (Mandatory)

- Yes

12.1 If yes, what method does the entity use to assess its effectiveness? (Mandatory)

- Setting up a regular review or audit of the entity's policies and procedures related to forced labour and child labour