Conestoga College Institute of Technology and Advanced Learning
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Kitchener, ON N2G 4M4
519.748.5220

Bachelor of Applied Technology (Honours) - Construction Management

Application for Ministerial Consent

(Under the Post-secondary Education Choice And Excellence Act, 2000)

NEW DEGREE PROGRAM

July 2023

College and Program Information

Name of Organization: Conestoga College Institute of Technology and Advanced Learning

URL: www.conestogac.on.ca

Proposed Degree Nomenclature: Bachelor of Applied Technology (Honours) - Construction Management

Location (campus and specific address) where program is to be delivered:

The program will be delivered at the following campuses:

- Cambridge Campus, 850 Fountain Street South, Cambridge ON N3H 0A8

Conestoga notes that curriculum incorporated in Conestoga degree programs may be delivered at Conestoga's North and South campuses.

North Campus

- 108 University Avenue East, Waterloo ON N2J 2W2
- 250 Laurelwood Drive, Waterloo ON N2J 0E2

South Campus

- 299 Doon Valley Drive, Kitchener ON N2G 4M4
- 850 Fountain Street South, Cambridge ON N3H 0A8

At Conestoga College, we would like to acknowledge that in Kitchener, Waterloo, Cambridge and Brantford we are located on the Haldimand Tract, land promised to the Haudenosaunee people of Six Nations, which includes six miles on either side of the Grand River. This is the traditional territory of the Anishinaabe, Haudenosaunee, and Neutral peoples. To recognize the land is an expression of gratitude and appreciation to those whose territory we reside on, and a way of honouring the Indigenous people who have been living and working on the land for thousands of years.

Anticipated Program Start Date: September 2024

For matters pertaining to proposal content, communications from PEQAB, and site visit coordination:

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Summary of Application

An executive summary of Conestoga's application for consent of the Bachelor of Applied Technology (Honours) - Construction Management program is provided in accordance with the Ministry's Summary of Application Form format.

The summary contains the information regarding:

1. Program description/ abstract;
2. Institutional fit and alignment with the strategic mandate agreement;
3. Duplication;
4. Evidence of student and labour market demand, including Key Performance Indicator (KPI) statistics;
5. Impact on expenditures out of public funds, including enrolment statistics;
6. Work integrated learning;
7. Government announcements and policies; and
8. Regulation and accreditation.

The Summary of Application Form, as submitted to the Ministry, is provided on the following pages.

SUMMARY OF APPLICATION FORM

Ontario Publicly Assisted Postsecondary Education Institutions Applying for Ministerial Consent under the *Postsecondary Education Choice and Excellence Act, 2000*

Ontario Publicly Assisted Postsecondary Education Institutions include Ontario publicly assisted colleges, universities, federates and affiliates.

Please complete all sections of the form and submit with the consent application.

SECTION 1: APPLICANT INFORMATION

Institution(s) Legal Name(s):
Conestoga College Institute of Technology and Applied Learning

Primary Contact Person for the submission

- Name and Title: Hannah Kruger, Degree Programs Consultant
- Telephone: 519-748-5220
- Email: hkruger@conestogac.on.ca; degreequality@conestogac.on.ca

SECTION 2: DEGREE PROGRAM OVERVIEW

*Please complete **either** the New Degree Program **or** the Degree Renewal box below.*

NEW DEGREE PROGRAM	DEGREE RENEWAL
Has the institution submitted a consent application for the same or a similar program before? No **Proposed Nomenclature:** Bachelor of Applied Technology (Honours) - Construction Management	**Current Program Nomenclature:** **Proposed Nomenclature, if a Nomenclature Change is Being Sought:**

Program Description/Abstract

Please insert the program abstract as included in the consent application. Please include information about the delivery mode: in-person, hybrid (online and in-person), and online (where all or almost all programming is delivered online.) Please indicate the relative balance of online and in-person instruction.

The following program abstract has been included in Conestoga College Institute of Technology and Advanced Learning's Bachelor of Applied Technology (Honours) - Construction Management Application for Consent. The program will be delivered in a *hybrid* format.

The Bachelor of Applied Technology (Honours) - Construction Management is an innovative four-year degree that provides you with an employer-desired blend of applied specialized skills in high demand within the rapidly changing construction industry. With a comprehensive and integrated curriculum in sustainable design, planning, construction methods, and managerial, financial and leadership skills, this honours degree will enable you to effectively initiate, plan, control and commission construction projects upon graduation. As a student in this program, you will experience the project-based learning approach that will enable you to apply, integrate and synthesize the theoretical body of knowledge into real-life projects. Three co-op work term opportunities will provide you with relevant experience to complement your academic studies. This unique degree aims to give you independent and collaborative opportunities to develop personally and professionally, and to engage construction management activities using techniques and approaches current to this field. Upon graduation from the Bachelor of Applied Technology (Honours) - Construction Management you will be well suited for positions such as Construction Manager, Project Manager, Site Superintendent, Scheduler, Contract Administrators, Procurement Managers, Project Control Specialist, and others emerging positions in this growing field. As a graduate of this program, you satisfy the academic requirements to take different professional certification exams such as: CAPM (Certified Associate Project Manager), PMP (Project Management Professional), PMI Risk Management Professional (PMI-RMP), PMI Scheduling Professional (PMI-SP), ASQ-Quality Manager, AACE- 3 Certified Estimating Professional (CEP), Gold Seal certifications, Certified Construction Estimator (CCE), Professional Quantity Surveyor (PQS).

SECTION 3: SECTOR CONSIDERATIONS

Institutional Fit and Alignment with the Strategic Mandate Agreement

1. ***Describe how the existing/proposed program aligns with the institution's Strategic Mandate Agreement. Describe how it relates to the institution's approved program areas of strength and growth and other considerations regarding institutional fit.***

The SMA between the Ministry and Conestoga College Institute of Technology and Advanced Learning (Conestoga) outlines the role Conestoga currently performs in the postsecondary education system and how it will continue to build on current strengths to achieve institutional goals and help drive system-wide objectives articulated by the Differentiation Policy Framework. As an Institute of Technology and Applied Learning (ITAL), Conestoga is committed to polytechnic learning to serve the needs of students, businesses, and community. Conestoga is the largest provider of college degrees outside of the GTA and has outlined a plan that includes expanded degree offerings consistent with its status as an Institute of Technology and Advanced Learning. This was identified as an area of key differentiation within Conestoga's Strategic Mandate Agreement (SMA).

Along with the Bachelor of Applied Technology (Honours) Architecture – Project & Facility Management, the Bachelor of Interior Design (Honours) and other Bachelor of Engineering programs, as well as existing diploma programs in the Schools of Engineering & Technology, the Bachelor of Applied Technology (Honours) - Construction Management program helps position the college as a leader in polytechnic education. This quality, career-focused degree program will provide an active learning environment, aligning skills in response to the changing needs of the labour market.

Conestoga's values include a focus on students, collaborations with partners, accountability, inclusiveness, and innovation. This degree will contribute to the strategic goal of *Capacity* by expanding market-driven programs, developing in-demand graduates, and increasing domestic enrolment. Producing career-ready graduates will contribute to the strategic goal of *Quality* by focusing on curriculum enrichment, the student experience, and placing graduates in roles that align with their education and experiences at Conestoga.

Collaboration with other degree programs at Conestoga will support initiatives in the SMA. Conestoga has a history of developing and delivering dynamic applied degrees that are rooted in industry input and labour market need. The Ministry has approved nineteen Conestoga College

applied degrees for delivery in the areas of: Applied Computer Science & Information Technology, Business, Community Services, Creative Industries, Engineering & Technology, and Health & Life Sciences. The Bachelor of Applied Technology (Honours) - Construction Management (BAT-CM) complements degree programs already offered by Conestoga, helping to position the college as a leader in polytechnic education.

In the 2020-2025 Strategic Mandate Agreement (SMA), Conestoga College committed to empowering individuals to achieve their potential, serving community needs and priorities, and being an active partner, employer, and corporate citizen. Conestoga has a proven track record of working with community and industry partners to create programs that provide graduates with opportunities to pursue careers that contribute to a prosperous Ontario. Per the SMA, a study of Conestoga's impact on the local economy identified that the college has a prominent role in contributing to "local prosperity and the health and competitiveness of the labour force" (see – Adapting for Prosperity). Conestoga's Office of Institutional Research and Planning completed a review of the current labour market prospects for careers relevant to a graduate of the proposed BAT-CM program, and found that the labour market across Ontario will have a great need for appropriately educated individuals in the Construction Management field who can address issues such as housing shortfalls and modernizing buildings to meet sustainability goals. The proposed Bachelor of Applied Technology (Honours) - Construction Management also meets Conestoga's Mission Statement, to "Champion innovation in education and research; to Serve community needs and priorities; and to empower individuals to achieve their potential." In addition, the proposed Bachelor of Applied Technology (Honours) - Construction Management aligns with the *business and technology programs* cluster identified in the 2020-2025 SMA. The BAT-CM program will interweave business acumen and technical knowledge to produce graduates who are equally comfortable in a boardroom or on a job site.

In addition, the BAT-CM program will add synergy to an existing cluster of programs in the School of Engineering & Technology. The link to the existing Architecture - Project and Facility Management degree will enhance inter-relationships between existing programs. The inclusion of the BAT-CM program at Conestoga will increase the education offered in the construction field delivered by the college system and will provide much needed career-ready graduates to related local industry.

The proposed degree is consistent with Conestoga's mission to champion innovation in education and research; to serve community needs and priorities; and to empower individuals to achieve their potential. The Bachelor of Applied Technology (Honours) - Construction Management degree aligns with Conestoga's strategic plan in that the program will maintain a high level of academic excellence through its use of technology, partnerships with the community, and a

curriculum that meets the needs of employers for well-educated, technically competent, and highly skilled graduates.

Conestoga's vision is to be recognized for excellence in polytechnic education. Building on our strengths, we will provide a full range of programming from preparatory and apprenticeship to diploma, degree, and advanced credentials. Our vision includes interconnected pathways to promote greater access to apprenticeship, undergraduate and graduate education, supporting student success in all credential levels at Ontario's universities and colleges.

The Bachelor of Applied Technology (Honours) - Construction Management program also contributes to the values and strategic priorities, as outlined below.

Values:

Student Focus

- We create the environments for students to realize their potential and graduate as individuals who can make meaningful contributions to their communities.

Collaboration

- We work with government, industry, community, and international partners to reach our strategic goals and create a vibrant learning and working environment built on excellence, quality, and respectful interactions.

Accountability

- We fulfill our commitments to the organization and the broader college community by assuming responsibility for our individual conduct, action, and results.

Inclusiveness

- We promote and foster a college community that is characterized and enriched by equity, diversity, and inclusivity.

Innovation

- We constantly strive to improve, enhance, and rethink the programs and services we provide to achieve ongoing improvement and higher standards of performance.

Strategic Priorities:

Quality – We will demonstrate excellence in programming and services while providing an outstanding learning and working environment for students and employees.

- Continue to improve the quality of programs and support services through ongoing monitoring, review, and the application of quality assurance measures and processes.
- Continue to accelerate and leverage digital technology to enrich curriculum as well as increase availability of, and access to, programs, while differentiating Conestoga and its

program offerings and enhancing program flexibility and customization to meet learner needs.

- Foster and sustain alumni relationships to provide employment opportunities for students and graduates while enhancing and reinforcing the Conestoga brand and reputation.
- Foster and support the development of a high-performing employee team that has adequate resources and is provided with ongoing training and development opportunities.
- Continue to focus on the health and wellness of students and employees to cultivate a supportive teaching, learning, and working environment.
- Provide a full range of high-quality and inclusive services to students, considering their diverse backgrounds, that contribute to their academic, personal and professional success.
- Identify and promote opportunities for engagement among members of the college community to enhance both student and organizational success.

Capacity – We will continue campus growth with enhanced access to programming for diverse learners and increased enrolment to meet the workforce needs of the communities we serve

- Plan and prioritize campus expansion in support of Conestoga's overall growth to meet employer and workforce needs.
- Renew and enhance existing facilities to support growth and improve the quality of the student and employee experience while improving space and resource utilization.
- Continue to focus on increased domestic enrolment across all categories of programming through ongoing promotion and recruitment as well as the delivery of a broad and diverse range of courses, programs, and credentials that can be customized to meet market demand.
- Promote, grow and diversify international enrolment through increased focus and emphasis on support services and integration within the college and broader community in order to contribute to Canada's immigration goals and address current and emerging workforce needs.
- Expand market-driven programs and applied research in response to ever-changing social, economic, and market demand on employers, businesses, and industries.
- Develop in-demand graduates by expanding and leveraging programming in work-integrated, experiential, and active learning that responds to current and evolving workforce needs with a particular focus on skills development, entrepreneurship, and leadership in the green economy.
- Plan and enhance the technology infrastructure, systems, processes and tools to support a growing network of campuses while enhancing the delivery of programs and services.

Sustainability – We will develop and enhance stakeholder relationships and partnerships and support employers in responding to changing social and economic conditions while optimizing organizational performance and supporting environmental sustainability

- Plan and manage financial and operating resources to support the sustainable delivery of Conestoga's programs and services and enable the continued expansion of programming and services. Enhance engagement with college and community partners to support the achievement of our goals.
- Contribute to Canada's fight against climate change through the development of innovative environmental solutions for industry as well as continued efforts to improve energy efficiency, reduce GHG emissions, and implement waste reduction and diversion strategies across college operations.
- Develop and implement marketing strategies and plans that differentiate the college, reflect the brand, and drive overall growth.
- Engage proactively with employers, business, community and government partners to address evolving expectations and priorities, respond to changing workforce and community needs, and increase understanding of Conestoga's role and importance in the prosperity and well-being of regions across southwestern Ontario and beyond.
- Work with and support employers in understanding and responding to changing social, economic, and market trends and demands with a particular focus on the skilled trades and the opportunities afforded by the green economy.
- Position Conestoga as a vital component in the social and economic recovery and future development of the municipalities and regions we serve.

Duplication

2. ***Discuss the similarities and differences of the existing /proposed program with other programs in Ontario. If the existing/proposed program is similar to other programs, explain what value it adds/would add to the system.***

The program team completed a review of comparable programs, summarized below. Please see Appendix A. Bachelor of Applied Technology (Honours) - Construction Management Program Comparators Chart for the complete review.

There are four colleges that offer a Bachelor of Applied Technology (Honours) - Construction Management in Canada. These are:

1. George Brown College: Honours Bachelor of Technology (Construction Management)
2. Red River College, Manitoba: Construction Management

3. Southern Alberta Institute of Technology: Bachelor of Science Construction Project Management.
4. Northern Alberta Institute of Technology: Bachelor of Technology in Construction Management

In Ontario, there is only one postsecondary institution that offers a Bachelor of Applied Technology (Honours) - Construction Management program at the degree level - George Brown College in Toronto. There are some significant differences between Conestoga's proposed Bachelor of Applied Technology (Honours) - Construction Management and the program offered through George Brown College. First, George Brown offers just one co-op work term, while Conestoga will be offering 3 paid co-op work terms, ensuring graduates have integral work experience across the fall, winter, and summer terms, and are well prepared to be work-ready upon graduation. The inclusion of three paid co-op work terms in the program aligns with the Co-operative Education and Work-Integrated Learning Canada accreditation requirements, a further differentiator from George Brown's program. Another key difference is Conestoga's project-based learning approach to construction management education. Students will integrate and apply the theoretical knowledge learned in the courses to industry related projects in each academic term of the program to promote a breadth of applied learning from an introductory to terminal level. These project courses incorporate the integration of learning across the varied subjects in this degree, with increasing complexity of project work to ensure a developed understanding of the major fields in the discipline. The proposed BAT-CM program also widens system-level accessibility, as it is offered in a different region of the province from George Brown and can attract students who may not be able to move or commute in order to pursue this credential.

In reviewing Conestoga's own programs, the proposed Bachelor of Applied Technology (Honours) - Construction Management compliments the degrees currently offered through the School of Engineering & Technology and will act synergistically to existing programs. The alignment of year 1 with the Bachelor of Applied Technology (Honours) – Architecture - Project and Facility Management (BAT-APFM) degree will allow for a common foundational knowledge in the wider infrastructure sector. Although similarities in programming exist, the Bachelor of Applied Technology (Honours) - Construction Management and BAT-APFM programs diverge in the later years of the program – BAT-CM focused on the development, and BAT-APFM on the maintenance, of a building project. BAT-CM will give students a wider view of the construction industry which will encompass civil infrastructure and assets, as well as building construction. Students will also delve deeper into construction knowledge and project management skills through their dedicated projects each semester. The proposed Bachelor of Applied Technology (Honours) - Construction Management will provide specialized education in this field, and place Conestoga as the go-to institution for a degree in this area of study.

With the ongoing boom of construction work, and rapidly changing construction industry, there will be demand for graduates with specialized skills in construction management and Conestoga's proposed Bachelor of Applied Technology (Honours) - Construction Management will be well positioned to meet that demand.

Evidence of Student and Labour Market Demand

3. ***Provide evidence of student demand for the program. The Ministry will consider evidence provided by the institution such as student surveys, enrolment summaries and growth trends for similar programs, system enrolment and projected growth, and demographic projections for relevant sub-populations.***

Prospective student application and enrolment growth trends within building related degrees is evident in Ontario. Institutionally, Conestoga can demonstrate student demand for the proposed Bachelor of Applied Technology (Honours) - Construction Management through an analysis of enrolment summaries and growth trends for similar degree programs offered in the School of Engineering & Technology. Conestoga's Bachelor of Applied Technology – Architecture – Project and Facility Management and Bachelor of Engineering – Mechanical Systems Engineering programs have shown consistent numbers and recent growth in both program acceptances into year 1, as well as in the number of college or university educated students seeking pathways into the programs, as illustrated below in Tables 1 and 2. Conestoga's Bachelor of Engineering – Building Systems Engineering (BSE) has shown consistent program acceptances since 2017 when the program accepted its inaugural cohort, indicating steady program interest over the past 5 years, as illustrated in Table 3. The BSE program has also demonstrated high popularity with students who have completed either a college or university program previously. With BSE receiving CEAB accreditation in 2022, we expect interest in the program to steadily increase for direct entry students. At this time, the Bachelor of Engineering - Building Systems Engineering program has a strong affinity to this industry, however the program is too new to meaningfully draw enrolment data from.

Bachelor of Applied Technology – Architecture – Project and Facility Management	2018	2019	2020	2021	2022
Conestoga Program Acceptances (Year 1)	89	109	95	142	133
College Diploma	8%	5%	15%	-	-
University Degree	2%	4%	8%	-	-

Table 1. Bachelor of Applied Technology – Architecture – Project and Facility Management Admissions information

Bachelor of Engineering – Mechanical Systems Engineering	2018	2019	2020	2021	2022
Conestoga Program Acceptances (Year 1)	123	130	127	166	173
College Diploma	17%	18%	8%	22%	20%
University Degree	5%	7%	13%	3%	2%

Table 2. Bachelor of Engineering – Mechanical Systems Engineering Admissions information

Bachelor of Engineering – Building Systems Engineering	2018	2019	2020	2021	2022
Conestoga Program Acceptances (Year 1)	68	49	38	49	47
College Diploma	n/a	14.3%	50%	30%	7%
University Degree	n/a	14.3%	25%	20%	13%

Table 3. Bachelor of Engineering – Building Systems Engineering Admissions information

At a system level, interest in STEM programs is increasing. Data from the Higher Education Quality Council of Ontario (HEQCO) demonstrates sector wide grow in STEM enrolments, as seen below in Figure 1. HEQCO's Undergraduate Enrolment in Ontario Universities by Field of Study. From 2000-2001 to 2017-2018 (the most recent data available from HEQCO), growth in STEM programs in Ontario rose from 38,376 FTEs to 63,545 FTEs, an increase of approximately 165%.

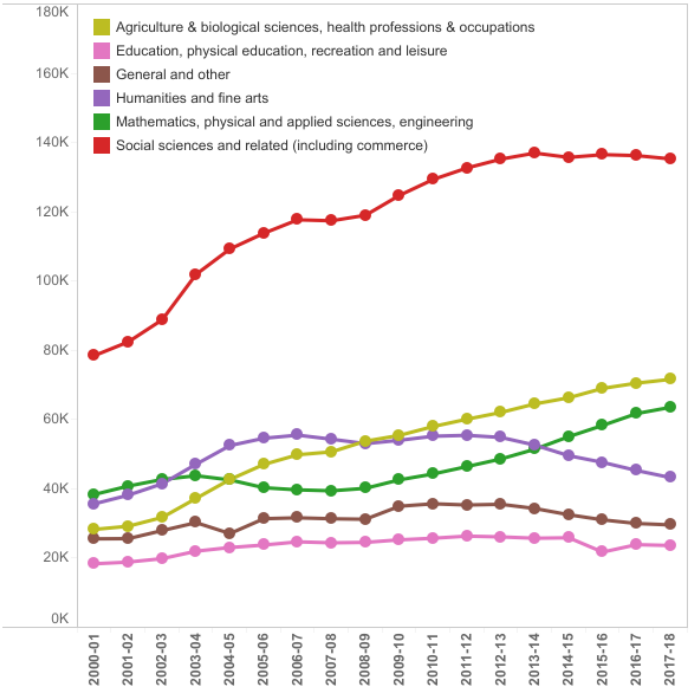

Figure 1. HEQCO's Undergraduate Enrolment in Ontario Universities by Field of Study

Given labour market demand, as discussed in the next section, Conestoga anticipates continued application and enrolment growth related to engineering and technology programs.

4. ***Provide evidence of labour market demand for the program and information about current or anticipated employment opportunities for graduates.***

   For an application to renew an existing consent, complete the table below with data from the most recent five years. If you are unable to complete the table, please provide alternate measures of performance.

   Address any indicators that are low relative to the institutional or provincial average or that have declined recently.

Conestoga's Office of Institutional Research conducted a labour market search based on National Occupation Codes (NOCs) and programs under comparable MTCU codes.

The Labour Market Report (see Appendix B. Labour Market Report) reviewed the following NOC codes: 0711 – Construction Managers; 0712 – Home Building and Renovation Managers; and 2231 – Civil Engineering Technologists and Technicians, and all indicated, according to the Canadian Occupational Projection System (COPS), to be in balance on a national level. On a local level, review of Home Building and Renovation Managers (NOC 0712) in particular suggests a 14% increase locally by 2028. In addition, the North American Industry Classification System code reviewed (23 – Construction) indicates an increase in positions locally by 2028.

As noted in the Labour Market report, it will be important for graduates competing for positions within these NOCs to have bachelor-level education, which will be a significant asset in the job market. Bachelor-level educated individuals will be set apart given their education and will also be competing for different positions than certificates such as "Construction Project Management," as an example. In terms of the local job market, there is noted to be a downturn in only one NOC Code analysed (NOC 2231 – Civil engineering technologists and technicians). Given that this NOC code emphasizes the civil engineering aspects of the proposed BAT-CM program, the scope of the industry within this NOC may not align with the breadth of job prospects for this group of graduates locally.

To further expand on the information contained within the Labour Market Information report, the Program Team has looked to BuildForce Canada for a specific report on this industry and its projections for growth. Based on BuildForce Canada's 2019 report, between 2019-2028 the demand for construction labour force for both the residential and non-residential markets is forecasted on average to increase. As a niche field with few similar programs of study in Canada, the proposed Bachelor of Applied Technology (Honours) - Construction Management program will serve Ontario as well as other provinces' workforce needs.

In addition to an increase in the size of the labour force by 2028, there will be a retirement bubble which will account for an estimated 261,000 worker retirements – representing approximately 22% of the current labour force. In Ontario specifically, BuildForce Canada outlines that there will be 86,300 retirements, which represents 21% of the current work force. "Industry will need to hire, train, and retain almost 100,000 additional workers to keep pace with expected demand growth. While industry should be able to recruit 78,900 new entrants...a projected gap exists of some 21,800 workers that will need to be filled" (BuildForce Canada Ontario Highlights 2020-2029). The Bachelor of Applied Technology (Honours) - Construction Management can fill the void made by the retirement bubble by producing highly skilled, applied graduates who can easily transition into the workforce to support Ontario's economy.

Figure 2: BuildForce Canada – Ontario Highlights Report, pg. 1

According to this same report, Southwestern Ontario is the only region in Ontario that forecasts growth in the Construction Sector:

Table 1: Changes in total employment across Ontario's regions

REGION	2020-2024 (% CHANGE)			2025-2029 (% CHANGE)		
	Residential	Non-residential	Total	Residential	Non-residential	Total
Total employment – Ontario	3.0%	6.3%	4.5%	-0.5%	-3.7%	-2.0%
Central	2.7%	4.3%	3.4%	-1.5%	0.9%	-0.5%
Eastern	3.5%	10.7%	7.1%	-5.7%	-7.4%	-6.6%
Greater Toronto Area	6.7%	7.9%	7.2%	2.2%	-8.2%	-2.5%
Northern	-1.5%	-4.4%	-3.4%	-10.0%	-3.8%	-6.1%
Southwestern	-6.8%	6.5%	-0.9%	0.0%	6.0%	2.8%

Source: BuildForce Canada

Figure 3: BuildForce Canada – Ontario Highlights Report, pg. 2

Based on PMI's research "Project Management Job Growth and Talent Gap 2017–2027," between 2017-2027, there will be 22 million new Project Management jobs created globally in project intensive industries (Manufacturing, Oil & Gas, Finance & Insurance, Construction, Information Technology and Utilities), of which approximately 2.5 million will be located in the US and Canada. (See https://www.pmi.org/learning/careers/job-growth). By 2028, the proposed BAT-CM program will be strategically positioned to fill the gap of retiring construction managers and new construction management jobs that will be created.

The 2022 Canadian Federal Budget (Budget 2022) included several items related to construction development initiatives. To address the lack of affordable housing and ensure that housing can be built quickly, Budget 2022 proposed to provide $1.5 billion over two years, starting in 2022-23, to extend the *Rapid Housing Initiative*. This new funding is expected to create at least 6,000 new affordable housing units. With the target of creating 100,000 net new housing units over five years, Budget 2022 also proposed to provide $4 billion over five years, starting in 2022-23, to launch a new *Housing Accelerator Fund*. While graduates of the BAT-CM program would not complete their studies before the end of the timelines for these specific initiatives, they would be well positioned to support the industry growth associated with these types of funding initiatives in housing.

Budget 2022 also proposed to extend the *Investing in Canada Infrastructure Program's* construction deadline from October 2027 to October 2033. The *Investing in Canada Infrastructure Program* will provide $33.5 billion over 11 years for public infrastructure across Canada. The inaugural cohort of the BAT-CM program would be graduating in 2029, placing them into the workforce in the midst of this program's cycle.

Direct or Indirect Impact on Expenditures Out of Public Funds

5. ***Identify financial impact, beyond basic operating funding, for MCU or other ministries.***

There will be no financial impact beyond basic program funding for the MCU or other ministries.

The BAT-CM program will deliver added value for the province in several areas:

Academic Impact

The BAT-CM program will deliver academic impact:

- Through established pathways to/from the degree to academic programs at other post-secondary institutions.
- Through established pathways from diploma programs into the Bachelor of Applied Technology (Honours) - Construction Management program.

- Broadening access to baccalaureate degree opportunities, thereby contributing to a highly skilled Ontario workforce.

Partner Impact

The BAT-CM program will deliver a positive impact to its community partners:

- By providing co-op work terms.
- By providing industry-prepared, degree-level graduates who will have an immediate and positive impact in their field.
- By providing opportunities for faculty involvement with professional associations and scholarly activities such as participating in conferences and delivering guest lectures, towards the goal of applied research and knowledge mobilization in the field.

Capital Impact

The BAT-CM program will make a capital impact on the college and community:

- Through workforce improvement that provides access to the technical and professional capabilities of program graduates.
- To date, similar Conestoga programs – such as the Bachelor of Applied Technology – Architecture, Project and Facilities Management (BAT-APFM) – have been viable, with revenue exceeding expenses.
- By sharing the program's first year with the BAT-APFM program, delivery costs will be minimized.
- As the region's only provider of polytechnic education, Conestoga plays an integral role in the success of the community: 65 per cent of our graduates remain in the area after completing their education, contributing more than $1 billion each year to the local economy.

OSAP loan default rates for Conestoga graduates are consistently among the lowest in the province.

Four Year Enrolment and Staffing Projections

6. ***Describe how the institution plans to finance and staff the program, including the sources of any funds beyond tuition and MCU funding.***

Enrolment

Conestoga proposes to accept the inaugural cohort to the Bachelor of Applied Technology (Honours) - Construction Management program in 2024, with an initial intake of 30 first-year students. Enrolment will remain at 30 students for first-year intakes until after the third year of

delivery (2026/27). In 2027/28, the year 1 enrolment numbers will increase to 45 students. This is outlined in more detail within the enrolment table under the next section.

Staffing Projections

Table 4: Four year staffing projection reflects the faculty needed to teach the Bachelor of Applied Technology (Honours) - Construction Management-specific courses. Existing faculty from the School of Engineering & Technology and the School of Interdisciplinary Studies will be assigned to courses in the Bachelor of Applied Technology (Honours) - Construction Management program – in fact, 27 of the specified proposed courses in the program design are already being offered in other degree programs. The faculty who teach these courses are identified in *Table 7. Academic Course Schedule 1*. New faculty will be hired as required. Enrolment projections and corresponding staffing requirements are based upon Conestoga's experience with engineering degrees and the numbers of advanced standing students seeking degree completion.

Year	Cumulative Enrolment		Cumulative Full-Time Faculty Equivalents (FTE)	# of New Hires	Ratio of Full-Time Students/ Full-Time Faculty
	Full-Time	Part-Time			
2024	30	-	4	1	8:1
2025	55	-	7	2	8:1
2026	78	-	10	1	8:1
2027	114	-	13	1	9:1

Table 4. Four year staffing projection

Students in the BAT-CM program will learn in some of the province's newest and most innovative learning environments, equipped with state-of-the-art technology. Conestoga's Cambridge campus opened in August of 2011. The 260,000 square foot facility is home to Conestoga's School of Engineering & Technology as well as its Institute of Food Processing Technology. The facility incorporates some of the most advanced technologies, processes, and health and safety standards from top processing plants around the world. This campus is also a living lab for energy efficiency construction projects, as it includes both a 500 kilowatt solar farm and a geothermal system of 80 bore holes descending 600 feet into the ground. The building was funded by a Government of Canada investment of $38.1 million through the Knowledge Infrastructure Program (KIP) and a contribution of $34.2 million from the provincial government. In addition, the Region of Waterloo provided $1.7 million for roadwork infrastructure to support the new campus, strategically located on Highway 401 at Fountain Street, directly across from Conestoga's Doon campus.

The Cambridge Campus has a significant amount of space dedicated to Engineering programs, including teaching labs ranging from 1500 - 2016 square feet and applied research labs. The Cambridge campus also provides open computer labs, a library resource centre, food services, and lockers. Conestoga College has recently opened its Reuter Street campus to house the School of Trades and Apprenticeship. The Cambridge campus is undergoing a space resource audit to reallocate spaces formerly needed for Trades program delivery to be used in the expansion of new and existing programs.

7. ***Complete <u>either</u> the New Degree Program enrolment table or the Degree renewal enrolment table. Please leave fields blank if not applicable – not all fields are mandatory. Where the program is offered through different delivery methods, please include one table per delivery method.***

Proposed Enrolment	Year 1	Year 2	Year 3	Year 4	Year 5	Annual Ongoing
Total head count*	30	55	78	114	127	127
Full-Time Year 1	30	30	30	45	45	45
Full-Time Year 2	-	25	25	25	38	38
Full-Time Year 3	-	-	23	23	23	23
Full-Time Year 4	-	-	-	21	21	21
Anticipated No. of Graduates	-	-	-	21	21	21

Table 5. New Degree Program Enrolment

*Total Head Count takes into account attrition.

Work Integrated Learning – workplace and co-op placements

8. ***Provide evidence that opportunities for relevant work placements, if required, will be available for students.***

Students in the Bachelor of Applied Technology (Honours) - Construction Management will have three mandatory co-op work terms, incorporated after year two of the program and each amounting to 420 hours of work. The first work term student is expected to be available no earlier than 2026; therefore, it is premature to obtain a firm commitment from work term placements at this time.

However, Conestoga can evidence opportunities for relevant work placements through a variety of mechanisms:

1. The co-op sequence has been designed to ensure that students will have co-op experiences in the Summer (Co-op Work Term I), Winter (Co-op Work Term II), and Fall

(Co-op Work Term III) semesters. This ensures that there is no competition between BAT-CM cohorts in their co-op search, as well as provides breadth of experience across the different seasons of construction in Canada.

2. Letters of support from local industry partners for the BAT-CM program, that are discussed in Section 6.1 Letters of Support.
3. Throughout the development process for the BAT-CM program, representatives from Conestoga's Co-op, Career Services and Work Integrated Learning department have been involved, providing their input and expertise to this process. Through these meetings, no issues have arisen which suggest a lack of sufficient, quality co-op work term opportunities within similar programs.
4. Conestoga is committed to finding co-op employment opportunities that not only support the outcomes provided within the course outlines, but that are paid experiences. Current Conestoga degree programs have consistently exceeded the number of placements required to ensure all students enrolled in degree programs have the opportunity to participate in valuable co-op work terms, as scheduled. This is evidenced through recent renewal submissions submitted to the Ministry and reviewed by PEQAB. It is expected that opportunities for co-op work terms will continue to be available.

9. *Describe the student's role in securing work placements and the support the applicant provides its students.*

Work experience will be incorporated into the BAT-CM program in the form of three co-op work terms. The Co-op Department will appoint an Employer Relations Consultant and a Co-op Advisor to assist the degree program in finding successful co-op terms for its students. As the direct result of feedback from a reviewer from a recent engineering site visit, the Co-op Department hired an Employer Relations Consultant (ERC) with a background in engineering to further bolster Conestoga's capacity to develop new, and strengthen existing, co-op opportunities in this cluster of programs. This ERC would also support the proposed BAT-CM program.

The Employer Relations Consultant builds upon the college's existing relationships with program advisory committee members, current diploma program supporters, and employers to develop suitable co-op work terms for students. The ERC proactively sources and fosters relationships with employers within the related fields who are new to Conestoga's co-op services to identify comprehensive work term opportunities. They liaise with faculty and members of the college community to co-ordinate job development efforts.

Co-op Advisors work with the students to support success in the workplace. Prior to a student's first work term, they are required to take a co-op and career preparation course, CEPR71050 Co-op and Career Preparation. Students must also compete for co-op positions by conducting an

individual job search via the online *My Career* portal. The Co-op Advisor will advise and assist students in securing a co-op work term through job search support and pre-employment training.

Government Announcements and Policies

10. *Describe how the existing/proposed program supports student mobility.*

Conestoga's comprehensive range of programming meets the needs of a variety of learners, providing multiple entry points into a variety of credentials, with established pathways to ensure that individuals across our community can access the education they need for their chosen careers. Articulation agreements with numerous colleges and universities around the world provide our students with ready access to additional post-secondary opportunities, including post-graduate programs.

The BAT-CM program adds to the slate of non-engineering, technology focused degree programs offered at Conestoga. As with all programs offered by Conestoga, laddering opportunities are considered as a cornerstone of program development and, more broadly, the mandate of the college. The Program Chair will investigate new pathways and articulations within Conestoga, and with other postsecondary institutions over the period of consent.

11. *Describe how the program aligns with the Differentiation Policy Framework, if not addressed in earlier questions, and other Ministry policies and priorities regarding specific programs or specific program areas, if applicable.*

Conestoga has ensured that the program aligns with the Differentiation Policy Framework and the PEQAB Non-Duplication of Programs standard through ongoing environmental scanning, based on input from the Program Development Advisory Committee (PDAC), from Conestoga's Institutional Research and Planning Department, and from the networks of key informants maintained by program faculty and administrators. This has helped to ensure the program will meet local needs not adequately addressed by other programs in Canada of the same level, nature and discipline of study.

Please see Duplication for conclusions of the comparative program analysis resulting from the most recent environmental scan.

SECTION 4: OTHER CONSIDERATIONS

Regulation and Accreditation

12. *Provide information about whether there is a (mandatory or voluntary) regulatory body and/or professional association/accrediting body related to the profession(s) for which students are/would be prepared. If there are regulated entry-to-practice*

requirements for this profession, please describe them, including whether a degree credential is a requirement.

Conestoga will not seek accreditation for this program. There is no applicable regulatory body.

However, the program design has been intentionally structured to allow students to satisfy the academic requirements for a variety of professional certification exams: CAPM (Certified Associate Project Manager), PMP (Project Management Professional), PMI-RMP (PMI Risk Management Professional), PMI-SP (PMI Scheduling Professional), American Society for Quality -Quality Manager, Association for the Advancement of Cost Engineering-CEP (Certified Estimating Professional), Gold Seal certifications, CEC (Construction Estimator Certified) and PQS (Professional Quantity Surveyor).

Following graduation, students will need only to complete the work experience requirements of the designation in order to apply. The course work will be covered through the program itself.

13. ***If relevant, please outline communications you have had with the appropriate professional association/accrediting body.***

Conestoga will not seek accreditation for this program. There is no applicable regulatory body.

Prior Assessments

14. ***If the existing/proposed program has been reviewed by an external accrediting or quality assurance body other than the Postsecondary Education Quality Assessment Board, please describe the body and the timing of the review.***

The proposed program has not been reviewed by an external accrediting or quality assurance body.

Standard 1: Degree Level

1.1 Degree Level Summary

The Bachelor of Applied Technology (Honours) - Construction Management (BAT-CM) is a four-year, applied honours degree program that will provide graduates with an employer desired blend of applied building construction knowledge, and the theoretical and technical training to thrive in the dynamic construction industry. Identified program themes are:

- Architectural Basics and Codes
- Civil Engineering
- Building Engineering
- Construction Economics & Finances
- Construction Management
- Non-Core & Complimentary

Students attending Conestoga's BAT-CM program will experience an integrated curriculum and applied learning environment that focuses on the knowledge and skills relevant to current innovations in the growing field of construction management. The individual threads of the program themes interweave in the project courses, which are embedded in each semester of the program. These themes are further reinforced through the co-op placements, and culminate at a terminal level in the Capstone course.

Theoretical, practical, and technical knowledge bases in construction management are scaffolded from an introductory to terminal level, through coursework covering the six program themes. This unique degree aims to give students independent and collaborative opportunities to develop personally and professionally. The program will offer many opportunities to develop critical thinking, professional communication, and leadership skills that will enable graduates to work successfully in the interdisciplinary, team environments common in the construction industry.

The three co-op terms are situated in the curriculum such that they both reinforce the classroom education, as well as provide a practical learning environment through which students can identify avenues for further exploration in their field of study – be that in coursework, through subsequent co-op work terms, or by pursuing further education at the graduate level. The courses in the BAT-CM program are scaffolded from the first semester to the final semester.

Graduates of the Bachelor of Applied Technology (Honours) - Construction Management degree will be well equipped with theoretical and applied knowledge of all steps in the construction process from surveying, costing, and material selection to the design of infrastructure and systems that follow appropriate regulations and codes. Career opportunities are numerous and encompass a wide variety of municipal, commercial, and industrial sectors, such as home building

and renovation managers, senior managers in construction, transportation, production and utilities, public housing authorities, and construction managers.

Graduates of the Bachelor of Applied Technology (Honours) - Construction Management program will acquire the professional and technical skills required to succeed in the ever-evolving field of construction management through a combination of theory, research, and applied learning to support their development as emerging and self-aware professionals. This learning is intentionally woven throughout the program as part of the outcome-focused, integrated learning journey expressed through the program design and curriculum map. The curriculum has been designed with input from our industry and academic partners to meet the degree level standards. The degree is comprised of:

- A project-based learning approach to construction management education. Students will complete industry related projects in each academic term of the program, to promote a breadth of applied learning from an introductory to terminal level. These project courses incorporate the integration of learning across the varied subjects in this degree, with increasing complexity of project work to ensure a developed understanding of the major fields in the discipline.
- Civil and building engineering courses such as structural systems, building design, and construction technologies and processes, increasing in difficulty throughout the program as is evidenced by required prerequisites.
- A focus on critical and creative thinking that will require students to: properly conceptualize problems; define associated requirements and constraints; research appropriate solutions; create and apply a solution using engineering, management and architectural techniques; and reflect, optimize and document the process and final recommendations.
- Three co-operative education terms that will offer authentic learning opportunities in which students will apply knowledge and skills in the real work environment.

The comprehensive program mapping to the Degree Level Outcomes can be viewed in *Figure 4. Bachelor of Applied Technology (Honours) - Construction Management Degree Level Outcomes Progression*. For each DLO, courses have been identified at the introductory (blue), intermediate (orange), and terminal (grey) level. This comprehensive coverage ensures that students are able to meet the degree level outcomes upon graduation from the program.

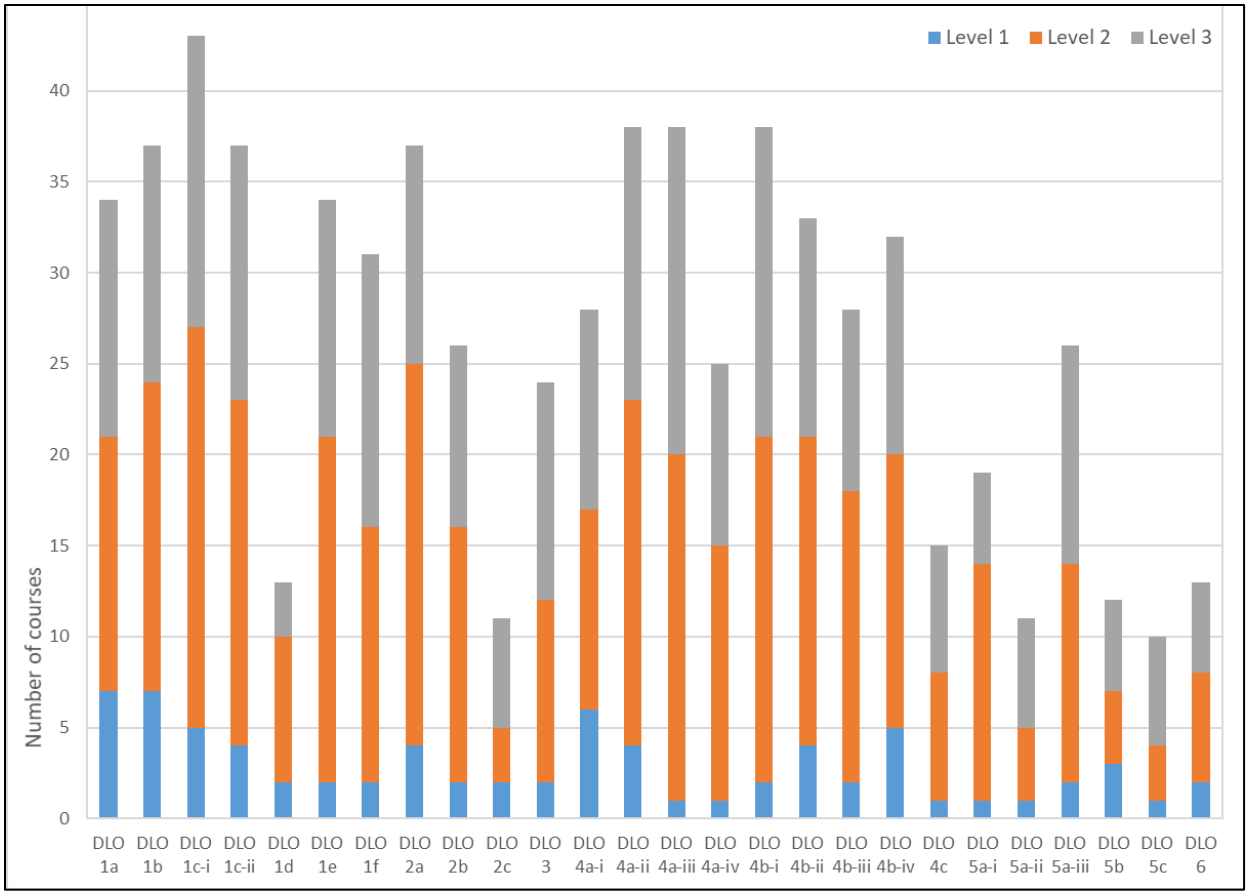

Figure 4. Bachelor of Applied Technology (Honours) - Construction Management Degree Level Outcomes Progression

1.1.1 Depth and Breadth of Knowledge

a) ***A developed knowledge and critical understanding of the key concepts, methodologies, current advances, theoretical approaches, and assumptions in a discipline overall, as well as in a specialized area of a discipline,***

b) ***A developed understanding of many of the major fields in a discipline, including, where appropriate, from an interdisciplinary perspective, and how the fields may intersect with fields in related disciplines,***

c) ***A developed ability to***

   i. ***Gather, review, evaluate, and interpret information, and***

   ii. ***Compare the merits of alternate hypotheses or creative options, relevant to one or more of the major fields in a discipline,***

d) ***A developed, detailed knowledge of and experience in research in an area of the discipline,***

e) ***Developed critical thinking and analytical skills inside and outside the discipline, and***

f) ***The ability to apply learning from one or more areas outside the discipline.***

Students attending Conestoga's Bachelor of Applied Technology (Honours) - Construction Management will experience an integrated curriculum and applied learning environment that focuses on knowledge and skills relevant to current innovations in the growing field of construction management. The curriculum is designed to increase the student's depth and breadth of knowledge by continually building upon previous learning.

Figure 5 illustrates the extent to which skills related to depth and breadth of knowledge are scaffolded in BAT-CM.

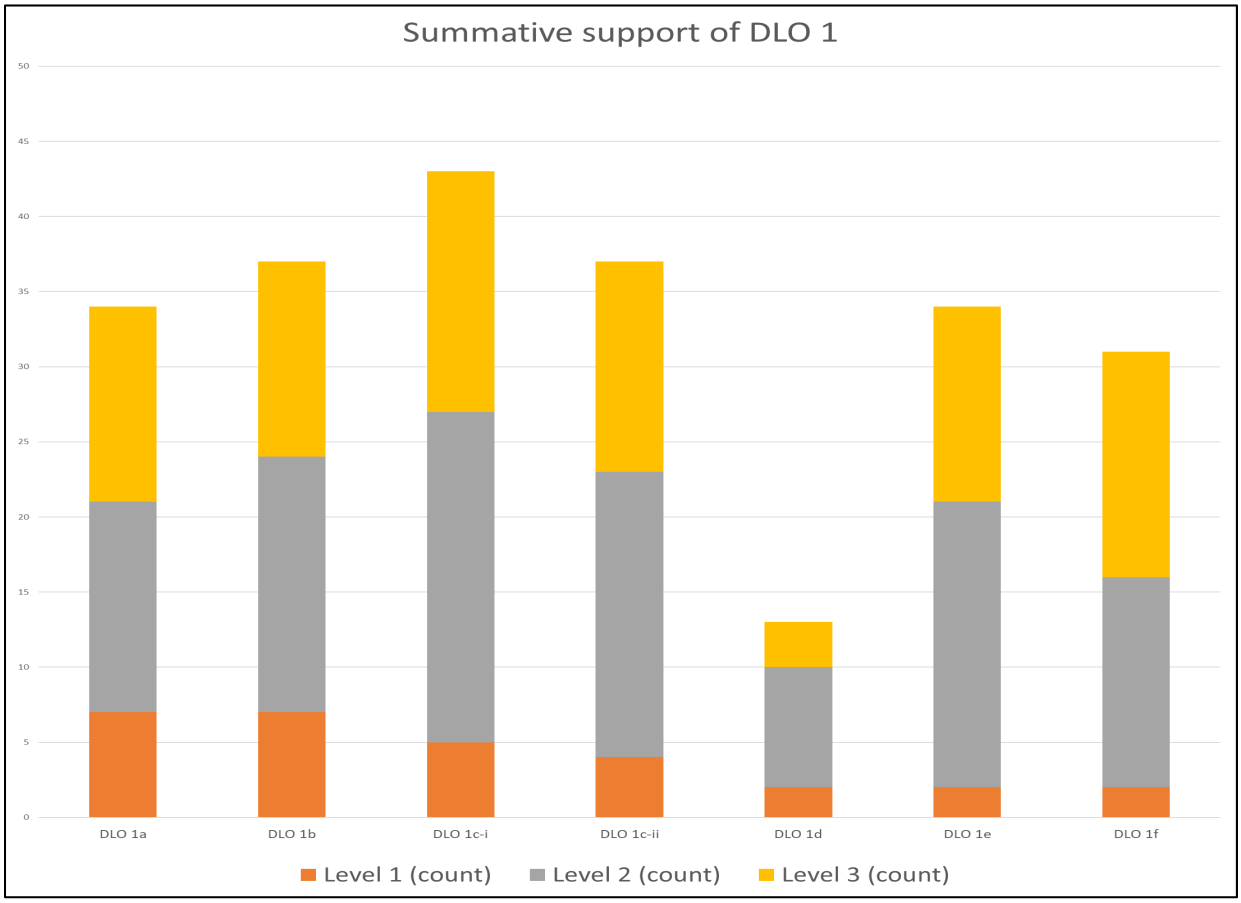

Figure 5. Summative Support of Degree Level Outcome (DLO) 1. Depth and Breadth of Knowledge

In the first two years of the program, students are introduced to, and begin to develop, their understanding of building engineering (ARCH72010 Building Sciences; DSGN72030 Structural Systems I), architectural basics and codes (ARCH71150 Codes; BCM7XXX2 Building Code and Regulation II; ARCH71120 Construction Materials and Methods I; ARCH71130 Construction Materials and Methods II), and computer applications (COMP71180 Computer Concepts I; COMP71190 Computer Concepts II). The first two years of the program also provide a fundamental project management education, which is intended to be both an explicit outcome of the program, as well as an underlying philosophy through which students interact with their

other courses. These program specific courses are complimented by introductory breadth courses that encourage a wider lens through which students may understand their sphere of practice (ENGL71000 Academic Communications; SOC71500 Group Dynamics; HIST74100 History of Advanced Structures). The breadth courses, in addition to many of the fundamental fist and second year courses, are shared with the BAPFM program and encourage inter-disciplinary relationship development and sharing of learning experiences.

In the third and fourth years, students further develop and begin to apply their learning acquired across the six program themes. For example, in the third year students take ARCH73120 Development Economics (Construction Economics & Finance); DSGN72025 Building Plumbing, Lighting & Electrical Systems Design & Estimate (Building Engineering); RSCH73000 Understanding Research (Breadth); and BCM7XXX8 Heavy Construction Equipment & Methods (Civil Engineering). In the final year, the Construction Management theme is heavily represented: BCM7XX10 BIM Application in CM; ARCH74110 Construction Quality Management; ARCH74120 Construction Risk Management; BCM7XXX12 Construction Procurement and Contract Administration; BCM7XX13 Construction Jobsite Management; and BCM7XX14 Sustainable Construction Practice. The capstone project courses will involve significant design skills, research ability, problem solving and analysis and will require students to manage their projects while working both individually and within a team.

The required knowledge and capabilities of students are grounded through a project-based learning model. In this model, traditional courses and a project course are delivered side-by-side in each semester, combining theoretical learning with practical applications and allowing students to integrate ideas across the themes of construction management. It is important to note that many project activities are supported by courses previously completed or concurrently attended by the students. Conversely, project deliverables and activities will be used as subjects of discussion in other courses within the curriculum, linking the theory courses and the projects even more closely. Students will also be expected to perform significant self-learning and research tasks under the guidance of the academic team. *Table 6. BAT-CM Program Themes* provides a complete list of the six themes and their associated courses, as well as the project courses.

Architectural Basics & Codes	Civil Engineering	Building Engineering	Construction Economics & Finances	Construction Management	Non-core & Complimentary		Project Courses
Construction Materials and Methods I*	Construction Technology I	Building Sciences*	Cost Estimating I	Foundation Module (BAT-CM)*	Group Dynamics*	Applied Environmental Law	Project I: Light Residential Design & Construction
Introduction to Construction Management	Construction Health & Safety Management	Structural Systems I*	Cost Estimating II	Construction Planning & Scheduling*	Scientific & Technical Communications *	Co-op Work Term I (BAT-CM)	Project II: Commercial Building Design & Construction
Computer Concepts I: BIM I*	Soils & Foundations	Structural Systems II*	Development Economics*	Project Leadership*	Business Economics*	Co-op Work Term II (BAT-CM)	Project III: Interior Renovation Planning & Construction
Construction Materials and Methods II*	Construction Technology II	Building Plumbing, Lighting & Electrical Systems Design*	Cost Estimating & Bidding Procedures	BIM Application in CM	History of Advanced Structures*	Co-op Work Term III (BAT-CM)	Project IV: Infrastructure Project Planning & Management I (Civil Works)
Code I*	Heavy Construction Equipment & Methods	HVAC & Fire Protection*	Construction Procurement & Contract Administration	Construction Quality Management*	Understanding Research*	Law & Ethics*	Project V: Adaptive Reuse, Design & Renovation
Computer Concepts II*	Construction Surveying			Construction Risk Management*	Applied Statistics*	Interdisciplinary Elective	Project VI: Infrastructure Project Planning & Management II
Building Code & Regulation				Construction Jobsite Management	Financial and Managerial Accounting*	Interdisciplinary Elective	Capstone Project I – Feasibility to Pre-Construction Phase
Code II*				Sustainable Construction Practice	Co-op & Career Prep*		Capstone Project II – Construction to Commissioning Phase

Table 6. BAT-CM Program Themes

* Represents courses that are already developed, approved by PEQAB, and delivered within other degree programs at Conestoga.

Knowledge and understanding will be acquired through multiple modes of delivery such as lectures, tutorials, projects, guest speakers and engagement with industry partners. Knowledge and understanding will be analyzed, applied, synthesized and deepened through project-based and co-operative learning that is intentionally woven throughout the program.

General education courses, or interdisciplinary studies, are critical in the development of an individual who is conscious of the diversity, complexity and richness of the human experience and results in a citizen who contributes positively to the society in which they live and work. In

addition, general education strengthens a student's non-technical skills, such as critical analysis, problem solving, and communication, in the context of an exploration of topics that are outside of the main discipline of study.

Conestoga's interdisciplinary curriculum contributes to the achievement of:

- the development of critical thinking, quantitative reasoning, written and oral communication skills;
- a more than introductory knowledge in the humanities, sciences, social sciences, global cultures and/or science & mathematics;
- knowledge of society and culture, and skills relevant to civic engagement; and
- a more than introductory knowledge of a discipline outside the core field(s) of study.

The non-core courses cover a wide range of subject areas including humanities (HIST74100 History of Advanced Structures; LAW74900 Law and Ethics), sociology (SOC71500 Group Dynamics), and mathematics (STAT73100 Applied Statistics), and increase in complexity and depth of knowledge between introductory and advanced levels of study. A breadth of choice is assured to meet the individual needs of the students and provides the student with a comprehensive understanding of the world in which they live and an opportunity for personal growth and awareness.

Students in the BAT-CM program will take a total of 16 non-core courses, of which two are designated as interdisciplinary electives. Twenty percent of the BAT-CM program is comprised of non-core courses which contribute to the breadth and depth of knowledge and skills acquired by students. The breadth courses have been previously assessed against the Standards and Benchmarks of baccalaureate degree level study and have been approved by PEQAB.

1.1.2 Conceptual & Methodological Awareness/Research and Scholarship

An understanding of methods of enquiry or creative activity, or both, in their primary area of study that enables the student to

a) ***Evaluate the appropriateness of different approaches to solving problems using well established ideas and techniques,***
b) ***Devise and sustain arguments or solve problems using these methods, and***
c) ***Describe and comment upon particular aspects of current research or equivalent advanced scholarship.***

The program of study and methods of assessment in the proposed Construction Management program ensure that students develop an understanding of the research methods, data assessment, methodological awareness, and critical thinking appropriate for the profession. Figure 6 illustrates the extent to which skills related to conceptual and methodological awareness/research and scholarship are scaffolded in the BAT-CM program.

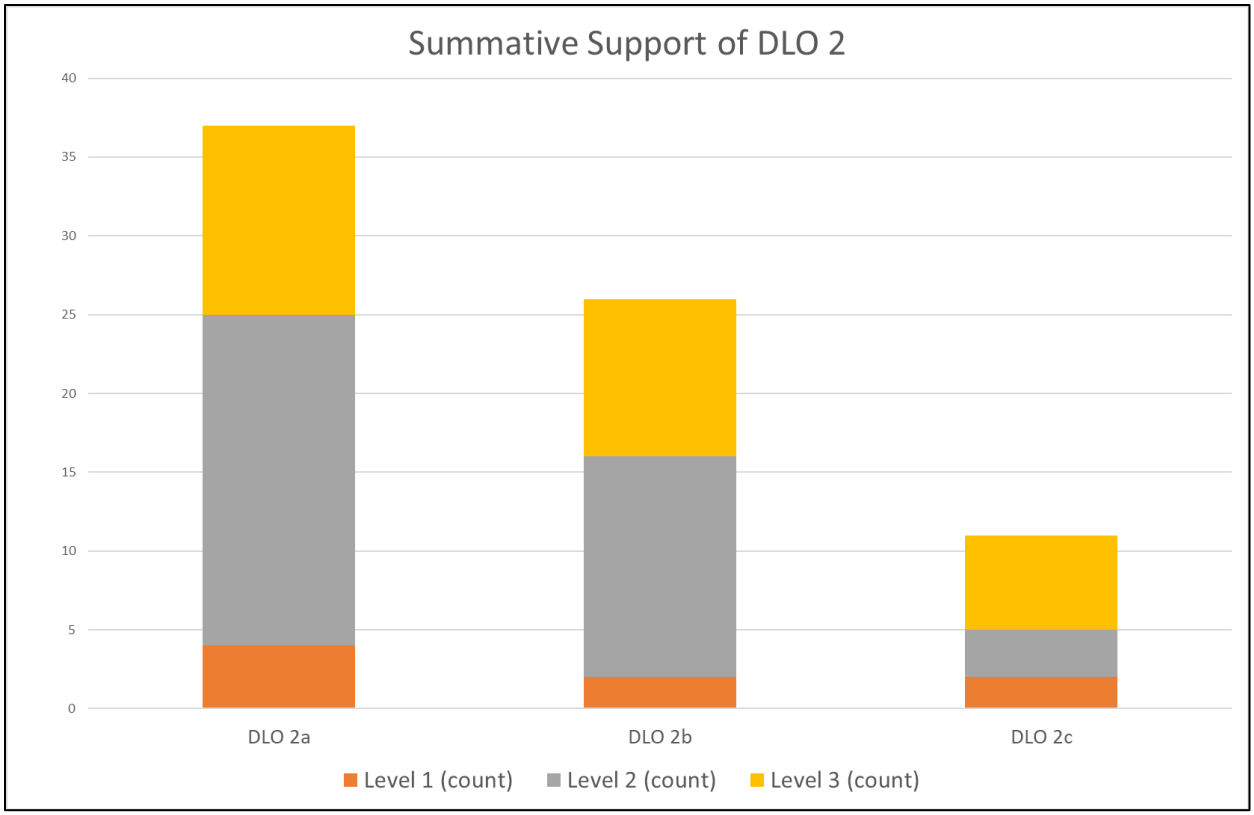

Figure 6. Summative Support of Degree Level Outcome (DLO) 2. Conceptual and Methodological Awareness/Research and Scholarship

The BAT-CM program is designed to offer students significant opportunities to evaluate the appropriateness of different program-specific problem-solving methods and techniques. Students will be expected to evaluate and solve problems using a breadth of inter-related ideas and techniques, in areas such as building systems, construction methods, quality assurance, environmental sustainability, and business management. In BCM7XXXX Introduction to Construction Management, taken in level 1, students will be taught the established ideas and foundational techniques related to basic design, project management, and facility management concepts and tools. In ARCH73130 Construction Planning and Scheduling in level 6, students will develop their understanding of project planning, scheduling, and controls, and evaluate the appropriateness of various approaches associated with these skills. In the terminal stages of the program, students will be able to evaluate highly complex construction management problems and apply their knowledge towards selection of the most appropriate solution. In ARCH74110 Construction Quality Management (level 10), ARCH74120 Construction Risk Management (Level 10), BCM7XX11 Applied Environmental Law and Sustainability, and BCM7XX12 Construction Procurement and Contract Administration students will complete a variety of case studies, then implement the techniques learned in a term project in a team environment.

One of the major threads of the curriculum, the semesterly project courses, require students to devise and sustain arguments and/or solve problems using appropriate construction management concepts and methodologies. Building upon topic courses that introduce and develop the concepts that represent the theoretical underpinnings of the curriculum, the project courses especially require students to synthesize and apply the learning across all of their courses and co-op placements in order to make methodologically informed decisions. For example, in DSGN7XXX2 Project II - Commercial Building Design & Construction (level 2), students will use their knowledge in design, problem solving, and management towards the development of lighting for a commercial building. Students will devise a comprehensive proposal covering issues related to space planning, code, building systems design, material use, construction methods and sustainability, and project budgeting. The final project will include detailed plans, sections and elevations, and a model. In level 11's DSGN7XXX8 Capstone Project II – Construction to Commissioning Phase, students will build upon the work carried out in DSGN7XXX7 Capstone Project I to assume a contractor's role and prepare a detailed quantity takeoff, cost estimate, site layout, project schedule, resource plan, risk plan, quality plan, procurement plan, construction health and safety plan, communication plan, and stakeholder plan. The project will engage all the lessons learned over the course of study, including co-ops. Students will be required to sustain their arguments through the complete integration and synthesis of the project.

Students will be required to consider different approaches, and to validate their final solution and conclusions, based on performed research and substantiated analyses. While research opportunities are embedded throughout the curriculum, the course RSCH73000 Understanding Research, taught in level 5, addresses the major components of the research process, including: development of theoretically informed hypotheses, implementation of theoretical concepts, development of data collection instruments, testing of hypotheses through data analysis, and the presentation of research results. In level 11, students will take BCM7XX14 Sustainable Construction Practice and explore current research in the field through case studies and industry guest speakers.

Additionally, Conestoga expects degree faculty to be involved in professional currency and scholarship activities. Faculty scholarly initiatives will also seek to involve students in applied research opportunities.

1.1.3 Communication Skills

The ability to communicate information, arguments, and analysis accurately and reliably, orally and in writing, to specialist and non-specialist audiences using structured and coherent arguments, and, where appropriate, informed by key concepts and techniques of the discipline.

Both written and verbal communication skills are important for success in the field of construction management. A construction management professional is expected to be able to communicate clearly and effectively with customers, tradespeople, engineers, and vendors in order to achieve a project's objectives. Figure 7 illustrates the extent to which communication skills are scaffolded.

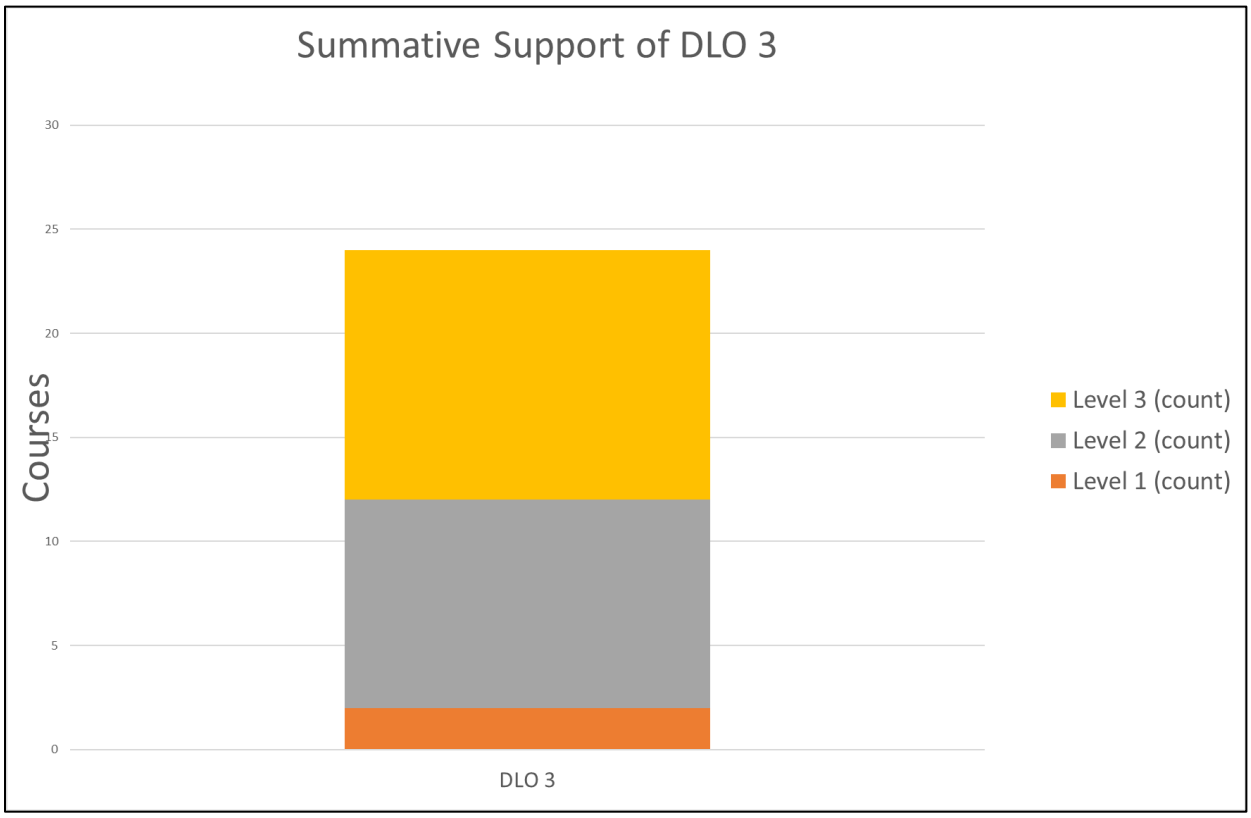

Figure 7. Summative Support of Degree Level Outcome (DLO) 3. Communication Skills

The program design includes the course ENGL71200 Scientific and Technical Communications in level 1, introducing and developing in students the skills necessary to communicate information, arguments, and analysis accurately and reliably. This course will prepare students to communicate scientific and technical information concisely and accurately using appropriate formats and graphic support. Students will study technical communication theory/ practice and apply the knowledge to creating, critiquing, and presenting technical documents. An oral presentation will emphasize the clear and concise communication of technical details and the use of appropriate visual support for technical information. ENGL71200 Scientific and Technical Communications delivers the foundational elements of the communication skills required for future success in the program.

The BAT-CM degree also incorporates significant group work which encourages students to develop their interpersonal communication skills. The course SOC71500 Group Dynamics

(delivered in the last two weeks of August preceding Semester 1 of the program), offers students introductory communication skills and knowledge to be effective members of a team, both as leaders and as contributors. Students gain an appreciation for the inter-professional and collaborative approaches to problem solving, and through self-reflection contribute to their areas of strength and seek out help in their areas of weakness. Students refine their interpersonal skills through interaction with peers, faculty and professional community, and learn to tailor their level of communication to an intended audience that may or may not be within the discipline. The position of this course is critical to the success of the students in the project courses in Semesters 1 and 2 as well courses later in the program.

Many courses have some form of written requirement (reports, essays, papers, etc.) and oral requirement (presentations, team meetings). The size and complexity of these communication requirements increases commensurate with each year of the program as students are challenged to describe, interpret, and synthesize their ideas through professional means. In the level 1 FND71055 Foundation Module, students will develop and apply skills in graphic communication and verbal presentation through the completion of a program project. In level 6, DSGN72025 Building Plumbing, Lighting & Electrical Systems, students develop their written communication skills through project-based assignments which require them to hone their specialist writing skills. An example of communication skills at the terminal level will be evidenced in BCM7XXX9 Cost Estimating and Bidding Procedures II in level 10. In this course, students will compete in teams to prepare detailed bid estimates and submit a competitive bid for a medium sized construction project. This course will require the full range of written and oral communication skills to successfully complete the course requirements.

1.1.4 Application of Knowledge

- **a)** ***The ability to review, present, and critically evaluate quantitative and qualitative information to***
  - **i.** ***Develop lines of argument,***
  - **ii.** ***Make sound judgements in accordance with the major theories, concepts, and methods of the subject(s) of study,***
  - **iii.** ***Apply underlying concepts, principles, and techniques of analysis, both within and outside the discipline, and***
  - **iv.** ***Where appropriate, use this knowledge in the creative process,***
- **b)** ***The ability to use a basic range of established techniques to***
  - **i.** ***Initiate and undertake critical evaluation of arguments, assumptions, abstract concepts, and information,***
  - **ii.** ***Propose solutions,***
  - **iii.** ***Frame appropriate questions for the purpose of solving a problem, and***
  - **iv.** ***Solve a problem or create a new work,***
- **c)** ***The ability to make use of scholarly reviews and primary sources.***

As a program that integrates knowledge from the engineering, technology, and business fields, students in the BAT-CM program must be able to identify and appropriately apply their knowledge to a construction management problem. With these skills, graduates of the BAT-CM program will be able to review, present, and critically evaluate quantitative and qualitative information at a baccalaureate level upon entry into the workforce. Figure 8 illustrates the extent to which skills related to application of knowledge are scaffolded in the BAT-CM program.

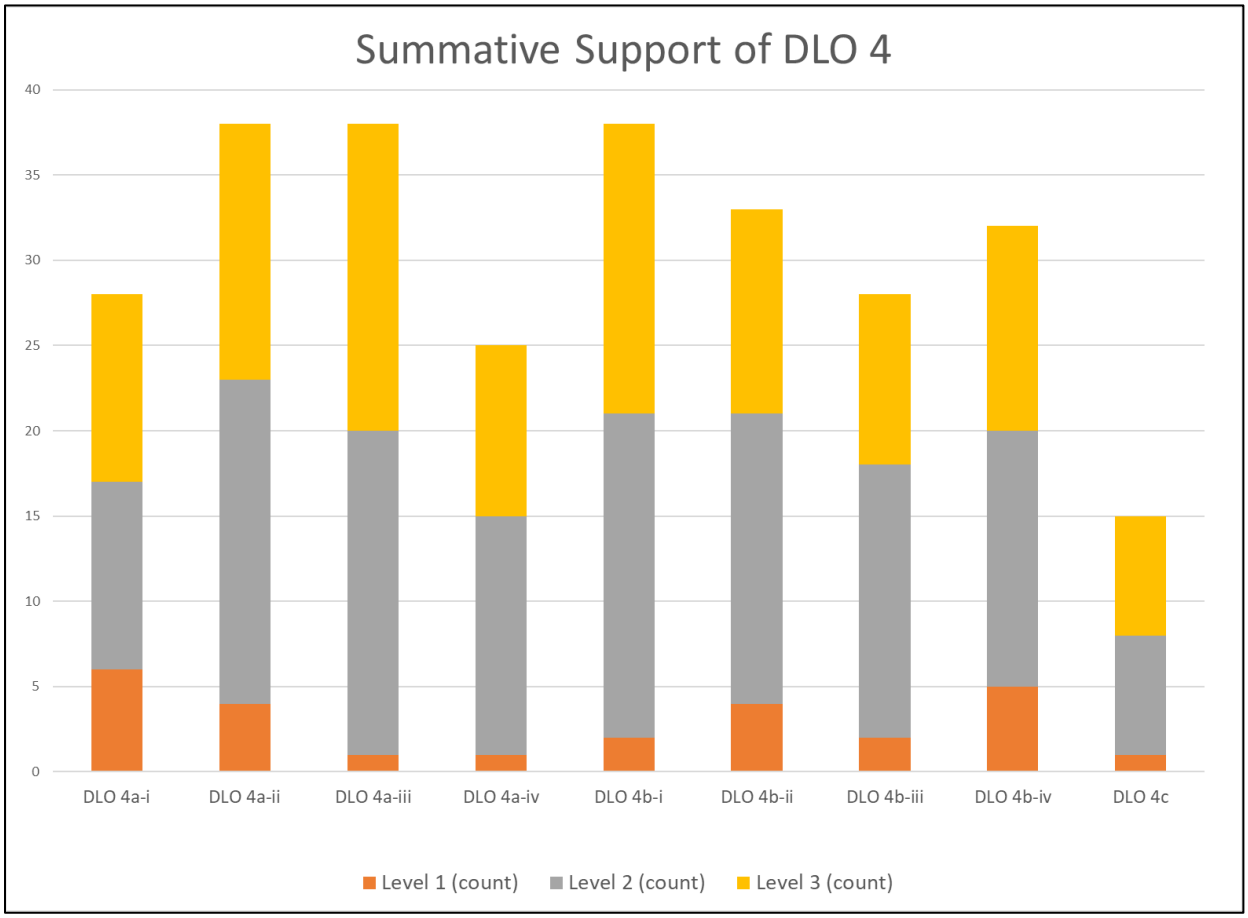

Figure 8. Summative Support of Degree Level Outcome (DLO) 4. Application of Knowledge

Students will apply learning and develop analytical techniques through laboratory and project-based courses. Individual and group projects and assignments in many courses require the application of various subject specific knowledge and research. Students will be challenged to present arguments or problems, discuss alternative solutions, recommend final solutions, defend findings and recommend areas for future work and improvement.

Program courses present students with significant opportunity to review, present, and critically evaluate information. Core BAT-CM concepts and theories will be integrated through applied projects each term, which anchor learning experiences to support scaffolding and deepen

understanding. The project courses focus on integrating the knowledge learned in theoretical and foundational courses, and applying it to the design of partial or complete solutions to specific problems and challenges within a given construction management environment.

In ARCH72010 Building Sciences (level 1), students will be introduced to the concept of the building as a living entity. Through three technical reports, students will be expected make sound judgements and apply concepts and principles to establish the appropriate performance characteristics of the systems as well as the preventative/corrective actions which could be prescribed when things go wrong, at an introductory level. In ARCH73130 Construction Planning and Scheduling, students develop their understanding of topics including project schedules; resource allocation; perform resource and time constrained scheduling; project cost estimating; project monitoring and control; scheduling under uncertainty and computer application in project planning. This course requires students to review and critically evaluate the interplay of these connected topics, and use established techniques to propose a solution within defined parameters. The two Capstone courses, taken in the final year of study, represent the terminal level of application of knowledge in the program. In Capstone 1, students work in teams and assume a consultant's role, preparing detailed market, technical and financial analysis reports, site selection and site feasibility studies, project design, preliminary cost estimate, bid document, bid invitation and simulated bid award. To succeed in Capstone 1, students must be able to apply and synthesize the material learned in other courses in order to complete the project proposal and a detailed project report. Capstone 2 builds on the work completed in Capstone 1. Students will apply their knowledge from the BAT-CM program themes to perform complete integration and synthesis of deliverables that include the site layout, project schedule, resource plan, risk plan, quality plan, procurement plan, construction health and safety plan, communication plan, and stakeholder plan. Capstone 2 is the best representation of the application of knowledge at the terminal level.

The project courses ask students to critically evaluate quantitative and qualitative scholarly sources and apply their findings to support rationale and justifiable project decision making. Students are introduced to foundational primary sources and scholarly works in level 1. In levels 2, 3, 4, and 6 students will develop their use of scholarly sources – exploring more broadly into the research in the construction management field. In levels 8, 10, and 11 students will be at the terminal level with regards to their abilities to review, assess, and make use of scholarly sources in their coursework.

In co-op work terms, students apply the knowledge and skills learned in the classroom within an actual workplace setting. Students will work within a related discipline, incorporating the theoretical and applied knowledge gained from their academic terms to the professional community. Additionally, students will apply and gain new essential skills and an appreciation for

the complexity of the paid workplace. Upon completion of their co-op work term, students will reflect on their work experience through a written report and are evaluated by both employers and faculty members.

1.1.5 Professional Capacity and Autonomy

a) ***The qualities and transferable skills necessary for further study, employment, community involvement, and other activities requiring***
   i. ***The exercise of initiative, personal responsibility, and accountability in both personal and group contexts,***
   ii. ***Working reflectively with others, and***
   iii. ***Decision-making in complex contexts,***
b) ***The ability to manage their own learning in changing circumstances, both within and outside the discipline, and to select an appropriate program of further study,***
c) ***Behaviour consistent with academic integrity and social responsibility.***

In addition to including a broad range of capabilities required for success as a construction manager, the proposed degree is designed to develop strong generic employability skills. Transferable skills and qualities necessary for further study, employment and industry/community involvement have been threaded throughout the coursework and are supported by the Program Development Advisory Committee members. The work-integrated learning (WIL) experiences included in the BAT-CM program situate degree students in real life work environments and provide opportunities for students to manage their own learning in changing circumstances. WIL is incorporated into the program in year 2, 3, and 4 as paid co-ops. Students set professional goals and manage their own learning in response to changing circumstances of various workplace settings. Students will evaluate their progress and work independently as they apply the expectations, rules, and regulations within workplaces and strengthen capacities as emerging professionals. Figure 9 illustrates the extent to which skills related to professional capacity and autonomy are scaffolded in the BAT-CM program.

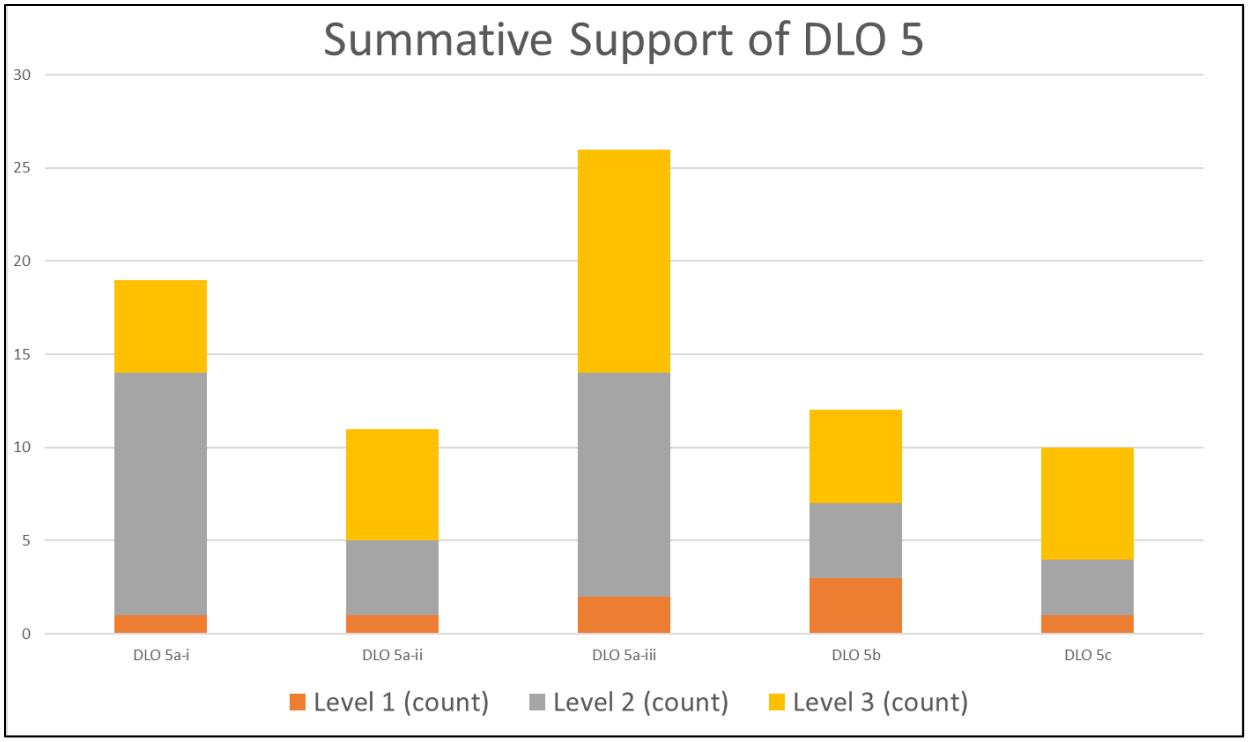

Figure 9. Summative Support of Degree Level Outcome (DLO) 5. Professional Capacity/Autonomy
Students will graduate with capabilities including:

- Communicating, with written skills enhanced through written assignments and projects and verbal, interpersonal communication skills honed through presentations, group projects and interaction with professionals.
- Thinking critically to solve a variety of problems.
- Working independently, managing complex situations, and working within teams.
- Analyzing situations, assessing information, and making evidence informed decisions.
- Researching, interpreting, synthesizing and evaluating material.
- Managing projects and teams. These time, project, and people management skills are developed through assignments and group projects.

Students are introduced to concepts related to professional capacity and autonomy in FND71055 Foundations Module. In addition to refreshing their knowledge base in a variety of aspects of the program's curriculum, students are introduced to the profession and begin to develop and apply skills in graphic communication, teamwork and verbal presentation through the completion of a program project. The non-core course SOC71500 Group Dynamics, also taken in level 1, will offer BAT-CM students a broader lens through which to consider and develop their personal and professional practice. Group Dynamics focuses on the comprehensive theoretical understanding of group processes, personal skills development, and application through intensive teamwork. These skills are of critical importance in both professional and social

settings. Through guided exploration and application of theoretical paradigms and practical strategies, students will achieve the necessary skills to succeed in and lead effective teams. By learning by doing (a core tenet of the course design) participants are empowered to become effective, practiced team members with experience applying skills necessary for leadership, analysis and evaluation, problem solving, and conflict management. Individual and team activities enhance participants' skills to work with a variety of personalities in diverse situations, and to effectively assume various professional roles within a team.

Students continue to develop their knowledge and skill set related to professional capacity and autonomy as they continue through the program. ARCH73130 Construction Planning and Scheduling (level 6) details the planning process from project charter through to scheduling and control. Students explore in detail the construction management process, and begin to exhibit autonomy of decision making in controlled, defined environments. In level 8's BCM7XXX7 Construction Health and Safety Management, students examine key statutes, regulations and policies related to OH&S management in Ontario within the context of industrial/commercial facilities and new construction developments. Through a project assignment, students learn to consider their professional responsibilities as they relate to workplace hazards, accidents, and emergencies.

At the terminal level, students demonstrate their professional capacity and autonomy in ARCH73080 Project Leadership (level 8). This course covers essential leadership skills in areas such as human resource management, communication management, and leadership styles and skills in project management. Students will learn professional skills and techniques related to organizational planning, staff acquisition, team development, team motivation and evaluation, conflict resolution, negotiations, effective communication, and personal productivity skills. Successful completion of this course will ensure students can exercise initiative and personal responsibility and accountability, work reflectively with others, and make decisions in complex contexts.

In addition to the representative topic courses discussed above, the 8 project courses in the BAT-CM curriculum also introduce, develop, and apply at a terminal level the knowledge and skills related to professional capacity and autonomy necessary for a graduate of the program to succeed upon graduation. The Capstone courses in level 10 (DSGN7XXX7 Feasibility to Pre-construction Phase) and 11 (DSGN7XXX8 Construction to Commissioning Phase) will best represent the advanced level of professional capacity and autonomy of program graduates. Working in teams over two terms, students will oversee a project from initial analysis through to commissioning. The Capstone courses are intended to formalize and finalize students' initiative, collaboration and complex decision-making skills through interim reports, group work, and presentations to juried panels of experts. At a terminal level, these courses will assess students'

professional capabilities to manage their learning, and behave with academic integrity and social responsibility. In addition, members of the Conestoga community are expected to act with academic integrity and this behaviour is modelled in every course. Academic Honesty (section 10.2 Academic Honesty) sets out Conestoga's practices.

1.1.6 Awareness of Limits of Knowledge

An understanding of the limits to their own knowledge and ability, and an appreciation of the uncertainty, ambiguity, and limits to knowledge and how this might influence analysis and interpretations.

The Bachelor of Applied Technology (Honours) - Construction Management curriculum has been designed to convey an appreciation for our rapidly changing world, and applies forward thinking to consider construction management related trends relative to emerging issues such as sustainability and green technology. The program design encourages students to understand that their knowledge has limits. Changes in technology and improvements to existing theories are introduced both to demonstrate the ongoing growth in the field, as well as reinforce the need for graduates to maintain currency in their field. To that end, students develop independent learning skills to allow them to keep abreast of these changes and be able to identify limitations in their professional skill sets over the course of their careers. The progression of academic rigor and independence throughout the BAT-CM program will ensure that students emerge with the capacity and desire for further professional growth and development. The importance of further studies, life-long learning, and taking responsibility for personal and professional growth and development will be emphasized. Figure 10 illustrates the extent to which these skills are scaffolded.

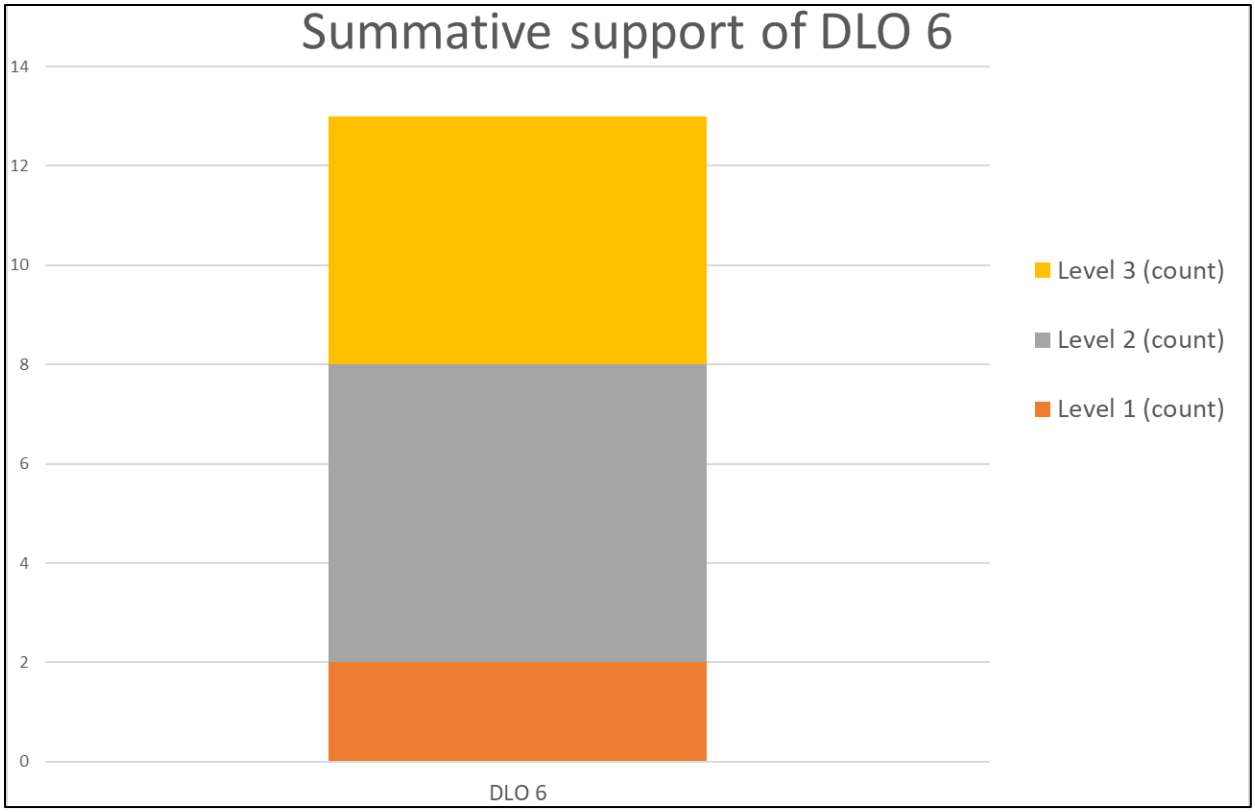

Figure 10. Summative Support of Degree Level Outcome (DLO) 6. Awareness of Limits of Knowledge

Students will be challenged to consider the limitations of their knowledge starting in their first semester of studies. DSGN7XXX1 Project I: Light Residential Design & Construction focuses on the basics of the design process, and the methodical approach that can be utilized to develop a building or space. FND71055 Foundations Module will also introduce students to the uncertainty, ambiguity, and limits to knowledge of the profession. This is achieved through exposure to Project Based Learning, which will prepare students for this alternative approach to learning which forms the basis of the program's structure.

As they move further into the program, students will cultivate a more nuanced understanding of the limits to their own knowledge and ability, an appreciation of the uncertainty, ambiguity, and limits to knowledge, and how this might influence analysis and interpretations. Design courses two through five deepen these skills by taking students through the process of design, problem solving, presentation and management of the design process (DSGN7XXX2 Project II: Commercial Building Design & Construction), investigation of interior spaces and programming (DSGN7XXX3 Project III: Interior Renovation Planning & Construction), planning and management of land development processes (DSGN7XXX4 Project IV: Infrastructure Project Planning & Management I (Civil works)), and the retrofitting of an existing building to accommodate a new occupant (DSGN73XX5 Project V: Adaptive reuse, design and renovation). Through their project courses,

students will broaden their technical knowledge, but also begin to understand the broader societal context and considerations in which they will conduct their professional practice.

The final capstone courses will offer students the opportunity to explore their awareness of the limitations of their knowledge at the terminal level. In DSGN7XXX7 Capstone I, students will select a project, submit a project proposal, and prepare a detailed project report to be presented to a professional jury of external and internal examiners. Students will act as consultants to prepare detailed market, technical and financial analysis reports, site selection and site feasibility studies, project designs, preliminary cost estimates, bid documents, bid invitations, and simulated bid awards. Through these documents, students will need to consider and defend the rationales for their choices within the ambiguity, uncertainty, and limits to their own knowledge of this project. In DSGN7XXX8 Capstone II, student will build upon the work carried out in the first capstone course to prepare detailed quantity takeoffs, cost estimates, site layouts, project schedules, resource plans, risk plans, quality plans, procurement plans, construction health and safety plans, communication plans, and stakeholder plans. The project will engage all the lessons learned in the course of study, including co-op placements. Students will perform complete integration and synthesis of their actions and present them in a professional jury setting to external and internal examiners. Students will be expected to identify and explicate how their analyses and interpretations are impacted by the uncertainties and ambiguities that exist in the construction management field, and how limits to their own knowledge might influence analysis and interpretations.

1.2 Achieving Degree Level Outcomes

Upon receiving consent, student work of exemplary, average, and minimally acceptable levels will be collected in the terminal stage of the program to demonstrate the achievement of the Degree Level Standard (*Standard 1, Benchmark 2* (PEQAB Manual 2023)). For each course, the following will be collected:

- Course outline
- Instructional Plan
- Assessment directions, rubric, and answer key for each assignment
- An exemplary, average, and minimally acceptable sample of student work for each assignment

Standard 2: Admission, Promotion, and Graduation

Admission, promotion, and graduation requirements are consistent with the* Ontario Qualifications Framework *and the postsecondary character of degree granting organizations.

The Bachelor of Applied Technology (Honours) - Construction Management admission, promotion, and graduation requirements are consistent with the postsecondary character of degree-granting organizations, are appropriate to the learning outcome goals of the program, and meet the Board's benchmarks. Further, the admissions requirements are appropriate to the learning outcome goals of the program and are as specified on the OQF (*Standard 2, Benchmark 1* (PEQAB Manual 2023)).

2.1 Admissions for Direct Entry and Mature Students

Requirements for admission to the Bachelor of Applied Technology (Honours) - Construction Management program for direct entry applicants are outlined in the table below, and align with the 2023 PEQAB Manual, Standard 2, Benchmark 2. The focus in the admissions requirements on courses in English, Mathematics, and Science is in line with the program learning outcomes (3.1.6 Program Outcomes). Preparation in these areas will support student success in the required program courses.

	Admissions Requirements for Direct Entry

Academic	• Ontario Secondary School Diploma (OSSD), or equivalent
	• A minimum of six (6) grade 12 U/M courses with a minimum cumulative average of 65%
	• Including the following required courses:
	  ○ English (ENG4U)
	  ○ One Math (either MFH4U, MCV4U, or MDM4U)
	  ○ One Science (either SBI4U, SCH4U, or SPH4U)
	  ○ 3 other U or M courses

Related work and volunteer experience	• n/a
Other Requirements i.e., Portfolio, First Aid/CPR, plus language requirements	• Applicants possessing degrees/diplomas from institutions where the language of instruction was not English will be required to provide test scores as evidence of their English language proficiency. Test scores, if required, would be a minimum of TOEFL iBT 88; IELTS 6.5 with no bands less than 6.0; CAEL 70 with no sub-test band scores less than 60; PTE Academic

such as IELTS and TOEFL	58; Conestoga English Language Test (CELT) Band 6; or equivalent scores in other recognized standard tests of English. • We offer a language program for students whose English language skills are below the standard required for admission, but all other admission criteria have been met. An applicant will be eligible for admission to the degree program after completion of level 4 of the General Arts and Science - English Language Studies (ELS) program with an overall grade average of 80% and no grade less than 75%. Placement in the ELS program is determined by scores on an in-house English language test or TOEFL or IELTS. • Applicants with previous post-secondary education will be assessed on an individual basis in accordance with college and PEQAB guidelines/policies for advanced standing. Graduates of related diploma programs should contact the program coordinator for further information regarding advanced standing in the degree program.

Canadian applicants apply through Ontario College Application Services (OCAS). International applicants apply directly to Conestoga's International Office. Conestoga maintains an Admissions policy that aligns with Ministry of Colleges and Universities and PEQAB's requirements. Conestoga's admissions policies are shared through the institutional website specific to the program, for example, the website for the Bachelor of Engineering – Building Systems Engineering.

Mature students (applicants who have not achieved the OSSD or its equivalent, and who are at least 19 years of age on or before the commencement of the program in which they intend to enroll) are expected to be able to demonstrate academic abilities equivalent to those of Ontario high school graduates, verified by successful completion of courses at the postsecondary level or an entrance examination (*Standard 2, Benchmark 3* (PEQAB Manual 2023)). Mature students will be accepted into the BAT-CM program according to the requirements laid out in Conestoga's Admissions Policy.

The Bachelor of Applied Technology (Honours) – Construction Management will operate as a bring your own device program. All students entering this program must:

- have a laptop computer that meets minimum specified requirements
- own and maintain their laptop
- bring their laptop on the first day of classes.

During the first week of the program, students will be instructed on how to download certain software products and how to access other products through the college server.

2.2 Advanced Standing and Degree Completion

Conestoga has in place policies and procedures pertaining to bridging requirements, advanced standing, credit, and credential recognition that are fair, reasonable, consistently applied, and publicly accessible (*Standard 2, Benchmark 4* (PEQAB Manual 2023)). All policies and procedures related to Admissions, Transfer Credits, Promotion, and Graduation can be found at https://www.conestogac.on.ca/policies/academics under Academic Administration.

Degree pathways are clearly articulated through a detailed gap analysis. Focusing on the academic integrity of the degree program, the analysis ensures that the degree level standard and program learning outcomes continue to be met by students admitted with advanced standing. The pathways are developed in conjunction with the Program Chair, Coordinator, Curriculum Consultant, and/or faculty with the subject matter expertise to determine comparability of the program content, perform thorough gap analysis, and create bridging modules, where necessary.

Conestoga will invite students to apply for advanced standing after completing previously mapped, affinity diplomas. The details of a given pathway, including admission requirements, will be used by Conestoga's admissions office, reporting to the Registrar, to process advanced standing applications. As with all degree pathways, the admissions officers confirm that applications are received from eligible students coming from postsecondary institutions with approved pathways. The advanced standing applications are then assessed by the degree program coordinator based on academic performance.

However, in the case where an existing advanced standing pathway is not outlined, consideration will be given to the development of a new pathway that fulfills standards as outlined by the Postsecondary Education Quality Assessment Board (PEQAB). This will be a collaborative process that involves all key stakeholders. Credits awarded will be monitored to avoid giving credit twice for the same learning.

This collaborative pathway design model ensures that the admissions officers responsible for processing pathway applications conduct assessments based on parameters previously defined by subject matter and curriculum experts from the program area. The professional development opportunities and academic/professional backgrounds of the program coordinators and faculty who evaluate curriculum appropriateness and validity is outlined in further detail in Standard 5.

The Bachelor of Applied Technology (Honours) - Construction Management program intends to attract graduates from **Civil Engineering Technology** 3-year advanced diploma programs. The

proposed pathway design for Conestoga's Civil Engineering Technology program, and the corresponding mapping of courses which supports it, can be found in Appendix C. Bridge Map - Civil Engineering Technology to Bachelor of Applied Technology (Honours) - Construction Management (in alignment with *Standard 2, Benchmark 5* of the 2023 Manual). Pathway students from the Civil Engineering Technology program will enter the program in the Fall level 6 term. In the summer semester prior, pathway students will need to complete FND71055 Foundation Module, SOC71500 Group Dynamics, DSGN71010 HVAC and Fire Protection, and FIN72050 Business Economics. Completion of these courses will ensure that students are prepared to succeed in the program, as well as that pathway students are meeting the breadth requirements of the degree program.

It is Conestoga's intention to utilize pathway designs that facilitate degree completion in two to three years from applicable diplomas and advanced diplomas. The completion requirements of advanced standing students are determined based on the gaps identified as part of the comprehensive analysis previously described.

The pathway design provided via the submission website is preliminary and will require the submission of full course outlines and other course materials prior to finalization during the first advanced standing intake year. Conestoga seeks consent to recruit with advanced standing into the program based on capacity to effectively establish degree completion arrangements through the completion of detailed gap analyses that demonstrate the academic integrity of the degree program, and that the degree level standard and degree program learning outcomes are met. Gap analyses for other similar college programs will be completed as needed and the record of this analysis will be kept as reference and continuity.

Additionally, all applicants with previous post-secondary education will be assessed on a case-by-case basis in accordance with College and PEQAB guidelines and policies for advanced standing.

2.3 Prior Learning Assessment

When Conestoga awards credit or advanced standing for learning that takes place outside formal postsecondary educational institutions, policies and procedures pertaining to prior learning assessment are considered fair, reasonable, consistent, and publicly available (*Standard 2, Benchmark 6* (PEQAB Manual 2023)). The provision of credit or advanced standing meets Ministerial regulations and follows Conestoga policies, as outlined in the Prior Learning Assessment and Recognition Policy and Prior Learning Assessment and Recognition Procedure, both available on Conestoga's corporate website.

Institutional policy indicates that credit will be awarded only for learning that can be demonstrated, and not for practical and/or clinical experience (*Standard 2, Benchmark 7* (PEQAB Manual 2023)). The Prior Learning Assessment and Recognition Procedure identifies how prior learning is assessed by the subject matter expert, including developing and/or reviewing PLAR assessment methods; evaluating PLAR assessment and submitting the final grade; and providing advice and/or feedback to PLAR candidate or student as required.

Conestoga does not award advanced standing of more than 50% of the total number of credits of the program based on prior learning assessment (*Standard 2, Benchmark 8* (PEQAB Manual 2023)). Conestoga's Prior Learning Assessment and Recognition Procedure identifies the proportion of credits based on prior learning assessment that can be awarded towards the degree.

2.4 Promotion and Graduation

Academic promotion and graduation requirements will be communicated through the Program Handbook on the Bachelor of Applied Technology (Honours) - Construction Management webpage, in accordance with the Baccalaureate Degree Promotion and Graduation Procedure. All policies and procedures relating to Admissions, Transfer Credits, Promotion, and Graduation can be found on the Conestoga College Policies website under Academic Administration. Below, the levels of achievement required for promotion and graduation in the Bachelor of Applied Technology (Honours) - Construction Management program are presented.

Bachelor of Applied Technology (Honours) - Construction Management **Program Requirements**	**Level of Achievement**	
	Promotion	**Graduation**
Noncore Courses	C (60%)	All passed
Core Courses	C (60%)	All passed
Work-integrated Learning e.g., Co-op work term	Pass	All passed
Other (please indicate)	-	-
Overall achievement	60%	60%

Promotion and graduation requirements are consistent with the learning outcome goals of the program and are reinforced by policies governing academic remediation, sanctions, suspension for students who do not meet minimum achievement requirements, and grading policies and guidelines (*Standard 2, Benchmark 9* (PEQAB Manual 2023)). Academic promotion and graduation requirements are communicated through the Program Handbook, in accordance with the Baccalaureate Degree Promotion and Graduation Policy, and include:

1. Appropriate policies governing academic remediation, sanctions, and suspension for students who do not meet minimum achievement requirements (see the Baccalaureate Degree Promotion and Graduation Procedure);
2. A grading system that is easily understandable, meaningful and convertible to students, other post-secondary institutions, and potential employers, whether expressed as letter grades, percentages or grade points;
3. Minimum average acceptable achievement for each individual course (across all course disciplines, including the breadth and discipline-related requirements) for progression in the program not lower than the level typically designated by 60%.
4. Minimum overall achievement for clear progression of each semester in the program and graduation from the program i.e., a program average greater than or equal to 60% (2.0 GPA); less than 3 cumulative failed or missing courses; and a lack of academic offences, code of conduct or professionalism violations.
5. Regardless of the grading scheme used (letter grade, grade point average, and/or percentage), and as appropriate to the introductory, medial, or terminal stages of the program, acceptable performance corresponds to student work demonstrating the degree level standard such as:

- Knowledge and/or critical understanding of:
    - the principal assumptions, methods and applications of the discipline/field of practice,
    - the main fields within the discipline and the discipline's relationship and interaction with other disciplines;
- An ability to:
    - interpret and to critically evaluate new material relevant to the discipline/field of practice;
    - devise and sustain arguments, and/or to solve discipline-related problems using the methods of the discipline/field of practice;
    - review, present, and critically evaluate design ideas based on appropriate research and experimentation;
    - frame appropriate questions to solve a problem or research question;
    - communicate clearly and effectively;
- An appreciation of the uncertainty, ambiguity and limits of the students' knowledge and/or of knowledge itself, and how this might influence analyses and interpretations based on that knowledge.

For an example of a current degree handbook, please see Program Handbook for BAT-APFM.

Standard 3: Program Content Standard

The program offers current knowledge in the field of sufficient rigour, breadth, and dept to achieve the knowledge and skills identified in the Degree Level Standard.

The Bachelor of Applied Technology (Honours) - Construction Management program was designed through consultation with professionals (representing both public and private sector) and academic partners through the Bachelor of Applied Technology (Honours) - Construction Management Program Development Advisory Committee. The degree has a unique conceptual framework, program themes, and program learning outcomes that have been strategically translated into a program curriculum framework that includes 3 co-op terms.

3.1 General Overview

The Bachelor of Applied Technology (Honours) - Construction Management includes 55 courses (including foundation courses and co-op work terms) delivered over eight academic semesters. *Table 7. Academic Course Schedule 1* sets out the program design for each academic year by semester. A summary of all course descriptions is provided in order of proposed delivery and the courses have been identified as core or non-core in Appendix D: Course Descriptions.

A course outline has been provided in the submission site for each course in *Table 7. Academic Course Schedule 1* (linked to each course title). Some courses have been previously assessed against the standards and benchmarks of baccalaureate degree level study and approved by PEQAB/MCU. Newly developed courses not yet assessed by PEQAB are indicated by the course code 7XXXX. All outlines still to be assessed include course learning outcomes, connections to the most relevant program learning outcomes and degree level outcomes, a listing of major topics, examples of proposed resources, and a break-down by hour of instructional methods.

Table 7. Academic Course Schedule 1 provides:

- The title of each course/requirement with a link to the course outline
- The type of course/requirement (core or non-core)
- The hours per course
- Course prerequisites, co-requisites, and restrictions
- The proposed instructors and the highest earned qualifications required to teach the course.

Course Schedule 1 can also be found at: Bachelor of Applied Technology (Honours) - Construction Management - Academic Course Schedule 1.pdf

Course Schedule 2 is identical to the first schedule with the exception that it does not identify the names of instructors. It can be found at: Bachelor of Applied Technology (Honours) - Construction Management - Academic Course Schedule 2.pdf

Level	Sem	Ref	Course Code and Title	Total Core Course Hours	Total Co-op Hours	Total Non-Core Course Hours	Mode of Delivery	Couse Prerequisites and Co-requisites	Instructor's Highest Qualification Earned and Discipline of Study
1	1	1	CON0101 Conestoga 101			1	Online		n/a
		2	ARCH71120 Construction Materials and Methods I	42			In Person		M.Arch
		3	BCM7XXXX Introduction to Construction Management	42			In Person		Relevant Masters/PhD
		4	ARCH72010 Building Sciences	42			In Person		PhD
		5	COMP71180 Computer Concept I: BIM I			42	Hybrid		M.Arch
		6	SOC71500 Group Dynamics			42	In Person		PhD
		7	ENGL71200 Scientific and Technical Communications			42	Online		PhD
		8	FND71055 Foundation Module	42			In Person		M.Arch
		9	DSGNXXX1 Project I: Light Residential Design & Construction	98			In Person		Relevant Masters/PhD
2	2	10	BCM7XXX1 Construction Technology I	42			Hybrid		Relevant Masters/PhD
		11	ARCH71130 Construction Materials and Methods II	42			Hybrid	ARCH71120 Construction Materials & Methods I	M.Arch
		12	ARCH71150 Code I	42			Online		M.Arch
		13	COMP71195 Computer Concepts II			42	Online	COMP71185 Computer Concepts I	PhD
		14	DSGN71010 HVAC and Fire Protection	42			In Person		PhD

		15	DSGN7XXX2 Project II: Commercial Building Design & Construction	98			In Person	DSGNXXX1 Project I: Light Residential Design & Construction	Relevant Masters/PhD
	3	OFF							
3	1	16	BCM7XXX2 Cost Estimating I	42			Hybrid		Relevant Masters/PhD
		17	ARCH73010 Code II	42			Online	ARCH71150 Code I	MA
		18	CEPR71050 Co-op and Career Preparation		14		Online		n/a
		19	DSGN72030 Structural Systems	42			In Person		M.Arch
		20	BCM7XXX3 Construction Surveying	42			Hybrid		Relevant Masters/PhD
		21	BCM7XXX4 Soils & Foundations	42			In Person		Relevant Masters/PhD
		22	DSGN7XXX3 Project III: Interior Renovation Planning & Construction	112			In Person	DSGN7XXX2 Project II: Commercial Building Design & Construction	Relevant Masters/PhD
4	2	23	BCM7XXX5 Cost Estimating II	42			In Person	BCM7XXX2 Cost Estimating I	Relevant Masters/PhD
		24	DSGN72040 Structural System II	42			In Person	DSGN72030 Structural Systems	M.Arch
		25	FIN72050 Business Economics	42			Hybrid		PhD
		26	HIST74100 History of Advanced Structures	42			Hybrid		M.Arch
		27	DSGN7XXX4 Project IV: Infrastructure Project Planning & Management I	112			In Person	Project III: Interior Renovation Planning & Construction	Relevant Masters/PhD
		28	Interdisciplinary Elective			42	Online		PhD
5	3	29	COOP72XXX Co-op Work Term 1 or GCM70000 Career Management in Canada		420		N/A	CEPR71050 Co-op & Career Prep	

6	1	30	BCM7XXX6 Construction Technology II	42			Hybrid	BCM7XXX4 Construction Technology I	Relevant Masters/PhD
		31	ARCH73120 Development Economics	42			In Person		PhD
		32	ARCH73130 Construction Planning and Scheduling	42			In Person		PhD
		33	DSGN72025 Building Plumbing, Lighting & Electrical Systems	42			In Person	DSGN71010 Building Systems I	MBA; M.Eng
		34	RSCH73000 Understanding Research			42	Online		PhD
		35	DSGN7XXX5 Project V: Adaptive reuse, design and renovation	112			In Person	DSGN7XXX4 Project IV: Infrastructure Project Planning & Management I	Relevant Masters/PhD
7	2	36	COOP73XXX Co-op Work Term II		420		N/A	CEPR71050 Co-op & Career Prep	
8	3	37	ACCT74100 Financial and Managerial Accounting	42			Online		MBA
		38	ARCH73080 Project Leadership	42			Online		MBA
		39	BCM7XXX7 Construction Health & Safety Management	42			Online		Relevant Masters/PhD
		40	BCM7XXX8 Heavy Construction Equipment & Methods	42			In Person		Relevant Masters/PhD
		41	STAT73100 Applied Statistics			42	Hybrid	RSCH73000 Understanding Research	PhD
		42	DSGN7XXX6 Project VI: Facility & Infrastructure Planning & Management	112			In Person	DSGN7XXX5 Project V: Adaptive reuse, design and renovation	Relevant Masters/PhD

9	1	43	COOP73X2XX Co-op Work Term III		420		N/A	CEPR71050 Co-op & Career Prep	
10	2	44	BCM7XXX9 Cost Estimating and Bidding Procedures	42			In Person	BCM7XXX5 Cost Estimating II	Relevant Masters/PhD
		45	BCM7XX10 BIM Application in CM	42			Online	COMP71190 - Computer Concepts II	Relevant Masters/PhD
		46	ARCH74110 Construction Quality Management	42			Online		PhD
		47	LAW74900 Law and Ethics			42	Online		M.Eng
		48	ARCH74120 Construction Risk Management	42			Online		MBA
		49	DSGN7XXX7 Capstone Project I - Feasibility to Pre-construction Phase	112			In Person	DSGN7XXX5 Project V: Adaptive reuse, design and renovation	Relevant Masters/PhD
11	3	50	BCMX7XX11 Applied Environmental Law & Sustainability			42	Online		Relevant Masters/PhD
		51	BCMX7XX12 Construction Procurement and Contract Administration	42			Online		Relevant Masters/PhD
		52	BCM7XX13 Construction Jobsite Management	42			In Person		Relevant Masters/PhD
		53	BCM7XX14 Sustainable Construction Practice	42			In Person		Relevant Masters/PhD
		54	Interdisciplinary Elective			42	Online		PhD
		55	DSGN7XXX8 Capstone Project II - Construction to Commissioning Phase	112			In Person	DSGN7XXX7 Capstone Project I - Feasibility to Pre-construction Phase	Relevant Masters/PhD
Sub-total of Hours per Category:				**2,212**	**1,260**	**435**			
Total Program Hours:				**3907**					

Core to Non-Core Ratio:	**83.6%**	**-**	**16.4%**	

Table 7: Academic Course Schedule 1

3.1.1 Contribution to Theory and Practice

The program design ensures an appropriate balance of theory and practice (*Standard 3, Benchmark 1* (PEQAB Manual 2023)). This balance is demonstrated through previously presented curriculum mapping (Standard 1. Degree Level), as well as in *Table 8. Program Domains and Related Courses in the Bachelor of Applied Technology (Honours) - Construction Management*. Students work with regulatory laws in courses that belong to the Architectural Basics and Codes domain. The Civil Engineering and Building Engineering domains expose students to structural theories. Awareness of construction theories are presented to students in the program domains of Construction Economics and Finance, and Construction Management. Students gain an appropriate balance of practice through the project courses which are taken each academic semester, as well as through co-op placements.

Program Domains	Courses in Domain
Architectural Basics and Codes	Construction Materials and Methods I Introduction to Construction Management Computer Concept I: BIM I Construction Materials and Methods II Code I Computer Concepts II Building Code & Regulation II
Civil Engineering	Construction Technology I Construction Surveying Soils and Foundations Construction Technology II Construction Health & Safety Management Heavy Construction Equipment & Methods
Building Engineering	Building Sciences Structural Systems I Structural Systems II HVAC and Fire Protection Building Plumbing, Lighting & Electrical Systems Design
Construction Economics and Finances	Cost Estimating I Cost Estimating II Development Economics Cost Estimating and Bidding Procedures Construction Procurement and Contract Administration
Construction Management	Foundational Module (BAT-CM) Construction Planning and Scheduling Project Leadership BIM Application in CM Construction Quality Management Construction Risk Management

	Construction Jobsite Management Sustainable Construction Practice
Non-Core and Complimentary	Group Dynamics Scientific and Technical Communications Business Economics History of Advanced Structures Understanding Research Applied Statistics Financial and Managerial Accounting Co-op and Career Preparation Co-op Work Term I (BAT-CM) Co-op Work Term II (BAT-CM) Co-op Work Term III (BAT-CM) Law and Ethics Applied Environmental Law 2 Interdisciplinary Electives
Project Courses	Project I: Light Residential Design & Construction Project II: Commercial Building Design & Construction Project III: Interior Renovation Planning & Construction Project IV: Infrastructure Project Planning & Management I (Civil works) Project V: Adaptive Reuse, Design and Renovation Project VI: Infrastructure Project Planning & Management II Capstone Project I - Feasibility to Pre-construction Phase Capstone Project II - Construction to Commissioning Phase

Table 8: Program Domains and Related Courses in the Bachelor of Applied Technology (Honours) - Construction Management

3.1.2 Contribution to Degree Level and Breadth Skills

The Bachelor of Applied Technology (Honours) - Construction Management program design includes 55 courses, as follows:

- 1 college orientation course
- 3 co-op work terms
- 51 academic courses

The core and non-core curriculum collectively contribute to the achievement of the degree level learning outcomes and align with PEQAB requirements, including:

- Critical thinking, quantitative reasoning, and communication skills
- Knowledge of society and culture and skills relevant to civic engagement

As required by the Ontario Qualifications Framework (OQF) and PEQAB standards, the degree provides exposure to increasingly complex theory and the application of theory to practice as it aligns to the field.

The core and non-core curricula collectively contribute to the achievement of critical thinking, quantitative reasoning, and communication skills (*Standard 3, Benchmark 2a* (PEQAB Manual 2023)).

Critical thinking is a cornerstone of the BAT-CM program. Over the course of their studies, students are expected to conceptualize and execute solutions to problems that span the Architectural, Civil Engineering, Building Engineering, Construction Economics and Finances, and Construction Management fields. Students will learn to critically appraise research and evidence to inform ongoing professional currency in their field.

The curriculum will also contribute to the development of quantitative reasoning skills. In the dedicated course on statistics, STAT73100 Applied Statistics, students learn to interpret and draw conclusions from statistical data. In FIN72050 Business Economics and ACCT74100 Financial and Managerial Accounting, students are further exposed to quantitative reasoning through the lens of business financial management. On the technology side of the curriculum, DSGN72040 Structural Systems II introduces students to the quantitative stages of design to select appropriate structural systems, and asks them to consider the complex nature of structures through a case study project.

Finally, the BAT-CM curriculum has a strong focus on oral and written communication. Most courses have a written component which might include reflections, scholarly papers, term papers, or written assignments. In level 1, students will take the foundational course ENGL71200 Scientific and Technical Communications, where they are taught to communicate scientific and technical information concisely and accurately using appropriate formats and graphic support. Students will also study technical communication theory and practice, and apply the knowledge to creating, critiquing, and presenting technical documents. Over the course of the program, students will complete 8 project courses that further contribute to the achievement of their written and oral communication skills. In each project course, students are expected to complete a case study or design report, and present the findings to their peers.

The core and non-core curricula of the Bachelor of Applied Technology (Honours) - Construction Management collectively contribute to the achievement of knowledge of society and culture, and skills relevant to civic engagement (*Standard 3, Benchmark 2b* (PEQAB Manual 2023)).

Throughout their coursework, students learn to integrate their technical, construction management knowledge with knowledge of society, culture, and civic engagement to become

informed, nuanced members of the construction management profession. Courses in the curriculum that have a particular focus on society and culture include LAW74900 Law and Ethics, BCM7XX11 Applied Environmental Law, and HIST74100 History of Advanced Structures. Further, the two interdisciplinary electives will also contribute to the development of an individual who is conscious of the diversity, complexity, and richness of the human experience and will result in individuals who contribute positively to the society in which they live and work. The choices for the interdisciplinary elective cover a wide range of subject areas including humanities, social sciences, natural sciences, and languages. These courses are designed to help graduates become engaged citizens, confident, curious, and ready to succeed in any chosen academic or professional discipline.

3.1.3 Progression of Difficulty in Degree Levels

The BAT-CM degree is scaffolded to provide exposure to increasingly complex theories, as well as the application of these theories to practice as it aligns to the field of construction management (*Standard 3, Benchmark 3* (PEQAB Manual 2023)). Conestoga assesses how the courses in the design work together so that graduates of the program will demonstrate the knowledge and skills that are transferable to the workplace or useful for further study, as expressed through the degree level outcomes and the program learning outcomes. Starting in semester 1, exploration and application continue throughout the program, engaging students more deeply with each subsequent presentation as students make connections and apply learning. This iterative curriculum design allows knowledge to scaffold from semester to semester in both technical and conceptual understanding of the fundamental concepts until students are able to meet the learning outcomes at an advanced level. A global overview of how the DLOs and the PLOs are addressed in an increasingly complex way has been described above: Standard 1. Degree Level, Appendix E: Mapping to Degree Level Outcomes, 3.1.6 Program Learning Outcomes, and Appendix F: Mapping to Program Learning Outcomes. Levels of learning illustrate the progression:

- Introductory or fundamental level with a focus on basic theories, concepts, and skills (level 1)
- Intermediate level, building upon the foundational ideas and concepts to make connections and apply learning (level 2)
- Terminal or advanced level, reflecting developed skills, and the achievement of higher order thinking through analysis, evaluation, and synthesis (level 3)

By the time students graduate from the Bachelor of Applied Technology (Honours) - Construction Management degree program, they will have worked with degree level outcomes from an introductory level to a terminal level, reflecting developed skills congruent with the expectations of an Honours baccalaureate education per the Ontario Qualifications Framework. Features of

the program and supporting resources to demonstrate that the knowledge and skill expectations in the six elements of the Degree Level Standard are met are outlined above in Standard 1: Degree Level. The figures below visually represent the progression of difficulty according to how many courses contribute to each DLO for the duration of the program.

Figure 11 illustrates that the first academic year of the Bachelor of Applied Technology (Honours) - Construction Management (levels 1 and 2) addresses many of the skills in the degree level outcomes at least once, primarily at the introductory level, as one would expect in the first year of a degree program. Academic Year 1 has been designed to set the foundation for the depth and breadth of knowledge required for construction management professionals.

Depth and Breadth of Knowledge (DLO 1) and Application of Knowledge (DLO 4) are met more frequently and even to an intermediate level of learning in the first year of study. DLO 1a, 1b, 1c-I and 4b-iv are addressed most frequently, owing to the broad range of courses that will underpin learning in the remainder of the program. These courses encompass a variety of topics such as natural sciences, computer programming, project courses, and construction methods.

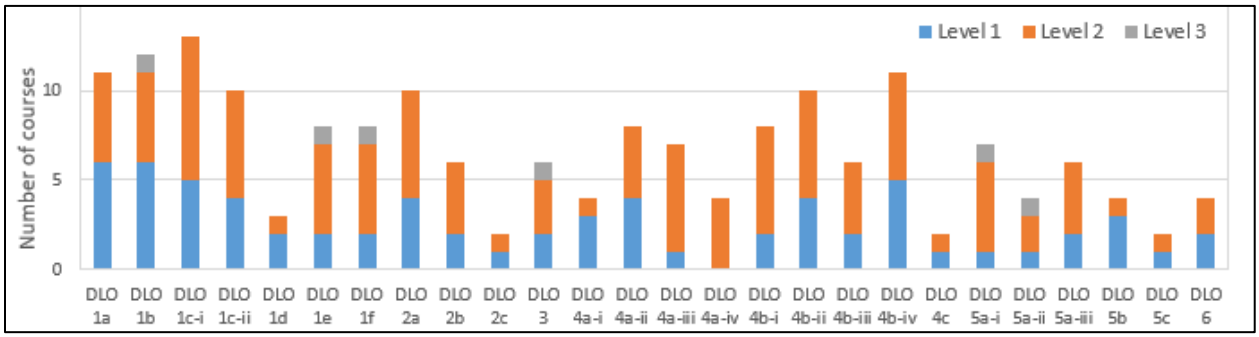

Figure 11. Number of courses in levels 1 and 2 (Academic Year 1) that meet Degree Level Outcomes

In Academic Year 2 (levels 3, 4, and 5), students are becoming more sophisticated in their application of degree level outcomes. Figure 12 shows how the degree level outcomes have been met over the academic year. The DLOs introduced and developed in Academic Year 1 are now being reinforced and satisfied in Academic Year 2, not only at an introductory level, but even at an intermediate level in the second term of the academic year. Several courses even begin to satisfy DLOs at the terminal level.

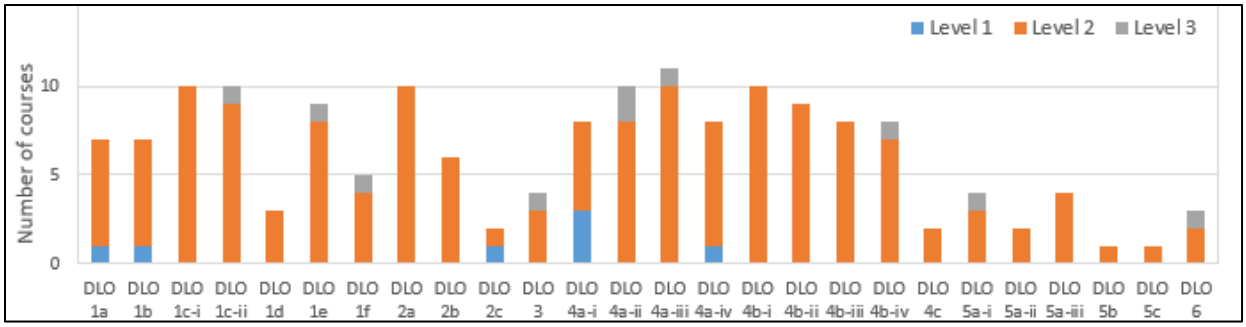

Figure 12. Number of courses in levels 3, 4, and 5 (Academic Year 2) that meet Degree Level Outcomes

Figure 13 (levels 6, 7, and 8 in Academic Year 3) shows that the progression of difficulty through the degree level outcomes continues from the third academic year. All DLOs are met at the intermediate (2) level, and almost all DLOs provide students with the opportunity to meet the DLOs at the terminal level.

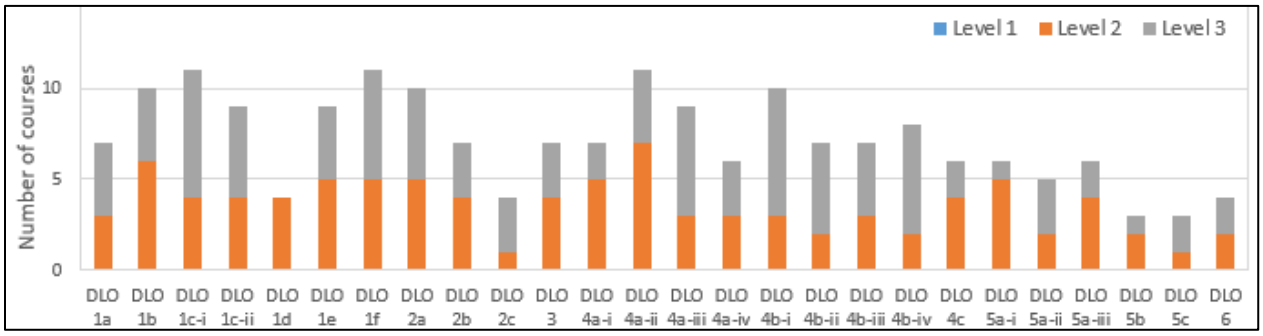

Figure 13. Number of courses in levels 6, 7, and 8 (Academic Year 3) that meet Degree Level Outcomes.

Finally, Figure 14 (levels 9, 10 and 11, Academic Year 4) illustrates that all DLOs are met at the terminal level. The curriculum is delivered at a level that prepares students for success in the workplace and gives them an opportunity to participate in research, thus also preparing them for graduate studies.

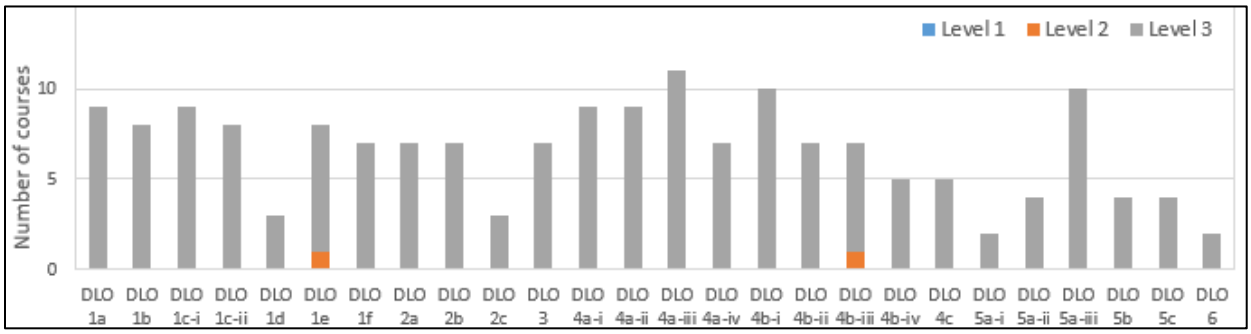

Figure 14. Number of courses in levels 9, 10 and 11 (Academic Year 4) that meet Degree Level Outcomes.

3.1.4: Ontario and Canadian Content

The curriculum reflects appropriate levels of Ontario and Canadian content (*Standard 3, Benchmark 4* (PEQAB Manual 2023)).

Instructional Content

In ARCH71150 Code I (level 2) and ARCH73010 Code II (level 3), students are introduced to Ontario's Building Code, and expected to apply these requirements to final course projects. ARCH73010 Code II also identifies Underwriters Lab of Canada (ULC) studies including flame spread in relation to building design.

In DSGN72025 Building Plumbing, Lighting & Electrical Systems (level 6) students apply the Canadian Electrical Code to the selection of equipment for a specific building, as well as further their understanding and application of the Ontario Building Code through considerations of acoustics and fire protection. Also in level 6, DSGN73110 Project V asks students to retrofit an existing structure using Part 11 of the Ontario Building Code.

In BCM7XXX7 Construction Health & Safety Management (level 8), students review federal, provincial, and local health and safety acts and regulations, as well as the legal framework in Ontario for approvals, enforcement, penalties, liabilities, and reporting requirements. In LAW74900 Law and Ethics (level 10), students learn about the principles and practices of the Canadian legal system as they relate to professional practice and liability. Provincial Acts providing for self-governance by professions will also be examined. LAW74900 Law and Ethics (level 11) covers key statutes, regulations and policies that relate to environmental management and sustainability in Ontario.

Resources

A variety of textbooks and documents have been identified in the course outlines to support appropriate levels of Ontario and Canadian content. These include:

- BCM7XXX7 Construction Health & Safety Management: the Ontario Green Book – Occupational Health & Safety Act and Regulations Handbook
- BCM7XXX12 Construction Procurement and Contract Administration: the Canadian textbook Practical Law of Architecture, Engineering, and Geoscience
- LAW74900 Law and Ethics: The Law and Business administration in Canada

Further, there are many provincial and national regulatory resources that are embedded throughout the BAT-CM program. These include:

- Ontario Building Code
- Underwriters Lab of Canada

- Canadian Electrical Code
- Ontario provincial statutes and regulations

3.1.5 Current Knowledge in Field

The curriculum reflects current knowledge in the field (*Standard 3, Benchmark 5* (PEQAB Manual 2023)). Each spring, the faculty team will participate in an Annual Program Reflection (APR) to review the curriculum and implement any updates to the course outlines to ensure that the curriculum is current. The APR is described in further detail in Standard 9: Internal Quality Assurance and Improvement. Finally, the Program Advisory Committee (PAC) meetings will occur twice per year to support this review and ensure that content is current from an industry perspective. Additional information regarding the PAC is described in further detail in 3.2 Program Advisory Committee.

3.1.6 Program Learning Outcomes

The program learning outcomes for the degree have been intentionally developed to align with industry requirements as articulated by the PDAC.

Program Learning Outcomes
1. Recognize, value, and respect cultural diversity in global, societal, economic, and environmental contexts.
2. Conduct feasibility studies for development projects and form recommendations regarding a project's viability.
3. Evaluate and apply construction methods and theories, materials, specifications, and costing in design and construction to facilitate project planning and delivery according to project requirements.
4. Apply concepts specific to building systems including structural, heating ventilation, air-conditioning (HVAC), plumbing, electrical and automation, in order to work effectively with appropriate stakeholders to creatively implement and coordinate these systems in design and construction.
5. Evaluate and select environmentally sustainable alternatives for design and construction.
6. Create schedules, cost estimates and issue tenders and bids for construction projects to ensure project success and timely completion.
7. Analyze and manage project quality assurance and risk to mitigate their impacts and improve processes meeting project specifications and industry standards throughout the project lifecycle.
8. Adhere to professional, ethical and legal codes of practice and comply with industry, labour and environmental legislation.
9. Integrate the principles of business, architecture, construction methods and engineering science to cope with and solve the multiple and complex problems and challenges of managing new and existing facilities, renovation and occupancy changes.

10. Use appropriate technologies and applications to enhance work performance and support functions, processes and communications.
11. Communicate effectively and persuasively through oral, graphic, print and computer media in the preparation of reports, specifications, presentations and working documents.
12. Apply principles of leadership and interpersonal skills to build, maintain and lead multidisciplinary teams throughout the project lifecycle.
13. Develop and activate plans for lifelong learning and professional development, and to maintain technological currency.

These learning outcomes will enable graduates to meet or exceed the requirements a) for graduates from similar programs in Ontario and other jurisdictions, b) of the field of study and/or practice, and c) of any relevant professional or accrediting body (*Standard 3, Benchmark 6* (PEQAB Manual 2023)). The Bachelor of Applied Technology (Honours) - Construction Management program has ensured that the program learning outcomes align to the degree level outcomes, outlined within Standard 1. Degree Level, and that the coursework teaches and assesses content which contributes to these outcomes. Each learning outcome is supported through course content that is taught and assessed regularly throughout the schedule of studies.

Each course has its own set of course learning outcomes that are included in the full course outlines. Mapping which illustrates how each course contributes to the degree level and program outcomes is provided within Appendix E: Mapping to Degree Level Outcomes, and Appendix F. Mapping to Program Learning Outcomes.

3.2 Program Advisory Committee

The Bachelor of Applied Technology (Honours) - Construction Management degree program was designed based on consultation with construction management professionals representing both relevant industry and academic partners through the Program Development Advisory Committee (PDAC). The minutes reflecting the PDAC's support of the Bachelor of Applied Technology (Honours) - Construction Management program have been provided in Appendix G: PDAC Meeting Minutes. They include record of the PDAC motion to support the proposed program and confirm that the program meets the requirements of the construction management field. To further support the program proposal, industry and academic partners have also provided letters of support confirming their endorsement of the Bachelor of Applied Technology (Honours) - Construction Management degree program (for an overview, see 6.1 Letters of Support). These letters are also available in full in Appendix H: Letters of Support.

Upon receipt of consent, the Bachelor of Applied Technology (Honours) - Construction Management PAC will include experts in the Construction Management field external to Conestoga who are employers and representatives from industry and professional organizations (*Standard 3, Benchmark 7a* (PEQAB Manual 2023)). *Table 9. Construction Management PAC*

membership with related credentials and employers lists the names of each PAC member with their related credentials and employer. The PAC members will be instrumental in ensuring the ongoing currency and relevance of the BAT-CM program to the field of practice (*Standard 3, Benchmark 7c* (PEQAB Manual 2023)) and support the program as represented in this submission (*Standard 3, Benchmark 7d* (PEQAB Manual 2023)).

Name	Related Credentials	Title; Employer/Organization
Dave Wilhelm	BASc.Engg; P.Eng.	MTE Consultants, Manager, Water/Wastewater
Justin Cole	Diploma, Architectural Engineering; C.E.T.; Gold Seal Certification	VanDel Construction; Project Manager
Meagan Sitek	BAT-APFM	Project Manager, Zehr Levesque Inc.
Michael Welk	Diploma, Electrical Engineering Technology; PMP; LEED Accredited Professional	Walter Fedy, Project Manager - Industrial
Shawn Baetz	BAT-APFM	Associate Project Manager, JLL Canada
Greg Eller	BA	Conestoga College, Project Manager, Initiatives
Yumna Nasir	BAT-APFM	National Director of Operations, Technology, Plan Group Inc.
Bradley Marin	Civil Engineering Technology Advanced Diploma	Senior Technical Director, GHD
Robert Lowry		Structural Engineer, MTE Consultants Inc.
Nicole Hurst	BAT-APFM; MBA	Project Manager, Michael + Clark Construction
Dwayne Hofstetter	Civil Engineering Technology Advanced Diploma; C.E.T., rcsi	Engineering Manager, GHD
Mike Henderson	Civil Engineering Technology Advanced Diploma	Manager Program Development Transportation, Region of Waterloo

Table 9. Construction Management PAC membership with related credentials and employers

With approval of this degree, the Bachelor of Applied Technology (Honours) - Construction Management PAC will continue to provide industry and academic feedback and comment on the currency of the curriculum in relationship to developments in the field of study as well as the relevant labour market (*Standard 3, Benchmark 7b* (PEQAB Manual 2023)).

Active community, industry, and academic partnerships provide support for Conestoga students, programs, and facilities. Approximately 1,000 community and business leaders provide input and direction on programming through the Program Advisory Committees (PACs) and

consortia. Conestoga adheres to all PAC requirements, and strives to achieve best practice (*Standard 3, Benchmark 7e* (PEQAB Manual 2023)). The PAC meets twice per year to provide their feedback and guidance regarding the program's curriculum relative to industry needs.

3.3 Non-Core

Core and non-core courses are indicated in *Table 7. Academic Course Schedule 1* in 3.1: General Overview. The non-core and breadth courses included in the Bachelor of Applied Technology (Honours) - Construction Management program have been previously assessed against the standards and benchmarks of baccalaureate degree level study and have been approved by PEQAB and the Ministry.

Specified non-core courses are breadth courses that are built into the design to ensure students explore topics that are outside the discipline of study but may be particularly helpful for graduates. From i) humanities, ii) sciences, iii) social sciences, iv) global cultures, and v) mathematics, students take courses in at least two specified non-core disciplines outside the core (*Standard 3, Benchmark 8a* (PEQAB Manual 2023)):

- **Humanities**: ENGL71200 Scientific and Technical Communications
- **Social Sciences**: SOC71500 Group Dynamics; RSCH73000 Understanding Research; LAW74900 Law and Ethics; BCM7XX11 Applied Environmental Law & Environmental Sustainability
- **Mathematics**: STAT73100 Applied Statistics

Non-core courses at Conestoga provide a more than introductory knowledge of the distinctive assumptions and modes of analysis of a discipline outside the core fields of study (*Standard 3, Benchmark 8b* (PEQAB Manual 2023)). The successful Breadth curriculum review in August 2020 assessed Conestoga's ability to provide a broad range of courses from introductory to advanced level in all six degree breadth fields of study.

The program design offers a balance of core and non-core courses (*Standard 3, Benchmark 9a* (PEQAB Manual 2023)). Core courses account for 80.3% of the program and non-core for 19.7% (see *Academic Course Schedule 1*). This closely aligns to the PEQAB recommendation of 20% non-core courses in a program.

The program design incorporates at least one non-core course for students to choose freely (*Standard 3, Benchmark 9b* (PEQAB Manual 2023)). As noted above, the program design has two interdisciplinary electives (in levels 4 and 11) for students to choose according to their personal preference over the four academic years.

3.4 Work-Integrated Learning

The work-integrated learning (WIL) experiences designed for the Bachelor of Applied Technology (Honours) - Construction Management degree situate students in real life work environments that are appropriate to the field of the program (*Standard 3, Benchmark 10a* (PEQAB 2023)). WIL is incorporated into the BAT-CM program in levels 5, 7, and 9. This carefully scaffolded series of 3 co-op terms is designed to complement the construction management theory and project coursework that students build upon each semester. If, however, a student is unable to obtain an appropriate position in the first work term, they are able to register for GCM70000 Career Management in Canada in place of COOP72XXX Co-op Work Term 1. GCM70000 is designed for degree-level students to fill any gaps in their skills related to the job market in Canada and is delivered by the Co-op office.

The co-op work terms are also staggered across all three delivery semesters (Co-op Work Term I – Summer; Co-op Work Term II – Winter; Co-op Work Term III – Fall), ensuring that students are gaining work experience in all seasons of the construction industry. Each co-op work term is scaffolded to build the foundation for the next co-op experience.

The academic requirements to be eligible for a co-op work term in a degree program are as follows:

- Minimum 65% session weighted average in the eligibility term two academic semesters prior to any co-op work term
- Maximum two failures or withdrawals during the academic semester that occurs in the eligibility term two academic semesters prior to any co-op work term
- Must have successfully completed all but two core courses, according to the program design, by the eligibility term prior to any given work term (regardless of the level the student was placed in advanced standing)
- Students (even those on special timetables) will not be permitted to complete a co-op work term until conditions above are met and all but two core course deficiencies, according to the program design, are cleared
- Co-op work terms may need to be re-sequenced to allow academic deficiencies to be cleared or in the event a student changes cohorts (i.e., graduation is delayed by one year or more). Students may not repeat a passed work term
- Should a student's academic performance decline considerably during the term just prior to any work term, the college reserves the right to withdraw the student from the upcoming work term
- In the case of back to back work terms eligibility to participate in consecutive work terms will be granted upon approval to participate in the initial work term

- Where two or more work terms occur back to back, should a student fail to achieve academic eligibility for the first work term, their eligibility for the second work term will be based on the term that occurs two terms prior to the second work term
- Students in degree programs may only fail/defer each work term in their program design once

The work-integrated learning courses have articulated, appropriate learning outcomes (*Standard 3, Benchmark 10b* (PEQAB Manual 2023)). Each co-op course listed below is linked to its course outline:

- COOP72XXX Co-op Work Term I
- COOP73XXX Co-op Work Term II
- COOP73X2XX Co-op Work Term III

Each student is supervised by both an institutional representative with relevant academic credentials and an employer/staff member who collaborate to evaluate the student performance (*Standard 3, Benchmark 10c* (PEQAB Manual 2023)).

Assignments associated with the co-op work terms provide opportunities and structure for student reflection on program learning outcomes in relationship to work-integrated learning experiences (*Standard 3, Benchmark 10d* (PEQAB Manual 2023)). All program learning outcomes for the Bachelor of Applied Technology (Honours) - Construction Management degree will be addressed to a terminal level by graduation. Levels of learning illustrate the progression:

- Introductory or fundamental level with a focus on basic concepts and skills (level 1)
- Intermediate level, building upon the foundational ideas and concepts to make connections and apply learning (level 2)
- Terminal or advanced level, reflecting developed skills, and the achievement of higher order thinking through analysis, evaluation, and synthesis (level 3)

The PLOs are addressed through the course outcomes and evaluations for the work integrated learning. The course outlines linked above outline the various assignments that encourage reflection.

Work integrated learning experiences in the Bachelor of Applied Technology (Honours) - Construction Management degree add up to more than 14 weeks (420 hours) of full-time equivalent work (*Standard 3, Benchmark 11* (PEQAB Manual 2023)). The total number of co-op hours required to graduate from the BAT-CM program is illustrated in *Table 10. Hours in Work Integrated Learning Experiences by Course*.

Co-op Work Terms	Hours
COOP72XXX Co-op Work Term I	420
COOP73XXX Co-op Work Term II	420
COOP73X2XX Co-op Work Term III	420
Total Co-op Work Term Hours	**1260**

Table 10. Hours in Work Integrated Learning Experiences by Course

All academic and administrative policies and procedures, including the Co-operative Education Policy, can be found under Academic Administration on Conestoga's website: https://www.conestogac.on.ca/policies/academics.

Standard 4: Program Delivery

The program structure and delivery methods support achievement of the expected and actual learning outcomes.

Conestoga's mission is to promote the prosperity and wellbeing of the communities we serve through the delivery of programming, workforce development and industry-focused research that meets local, regional, and international demands. By implementing quality assurance practices that are intentionally informed by the goal of supporting student success, Conestoga ensures program structures and delivery methods are continually improved to support the achievement of learning outcomes.

The BAT-CM program will be delivered in a hybrid format, with approximately 30% of the curriculum being delivered online. Resources are available to develop alternative delivery methods as needed.

4.1 Degree Development Process

4.1.1 Overview

Conestoga considers degree program development, review, revision, and renewal central to the function of meeting the needs of the community, employers, government, and students. The process of developing and reviewing degree programs incorporates all administrative areas and operational functions of the institution that are affected by, and contribute to, degree program design and delivery. Degree program development and review is conducted within a context of internal and external scrutiny and follow a well-defined path from initial discussion to final implementation.

Conestoga's Degree Quality & Accreditation department facilitates this process. Comprised of experts focused on program quality assurance best practices, Ministerial regulations, and Postsecondary Education Quality Assessment Board (PEQAB) standards, the Degree Quality team works with academic schools to navigate the college's degree development, review, and renewal processes. In the development of a new degree, a Degree Programs Consultant, Curriculum Consultant, and appropriate representatives from departments across the institution are engaged to ensure curriculum design and delivery, pedagogy, and educational processes reflect best practices and meet internal policy and external regulatory requirements. In the event that a program will be partially or fully delivered online, a representative from the Online Learning Centre will be an integral part of the program development team. Likewise, the Co-op Department and the School of Interdisciplinary Studies will support the development of co-op and breadth program elements, respectively.

New program ideas require approval at the conceptual stage via an in-depth Request for Approval to Proceed package. The package includes an environmental scan containing both academic and labour market assessments, as well as feedback from industry and academics via the Program Development Advisory Committee. The package outlines, but is not limited to, the following program delivery considerations:

- Program rationale
- Program description
- Delivery method
- Contribution to institutional enrolment growth
- Financial plan
- Competitive analysis
- Admission requirements
- Human and physical resources
- Teaching resources
- Information technology requirements and support services
- Student services and resources
- Program Development Advisory Committee input
- Proposed learning outcomes
- Proposed course schedule and course descriptions

The Request for Approval to Proceed package is reviewed by a number of internal committees, where each committee reviews the package and has an opportunity to hear from and speak to the program development leadership, typically the Chair and Dean. These committees review the viability of the degree program including the general focus/field of study proposed – and assess Conestoga's capacity to deliver the program based on the degree approval package and supporting documentation.

The first review committee is the Program Planning and Review Committee. PPRC membership includes the Director, Finance; Director, Co-op and Career Services; Associate Registrar, Admissions and Pathways; Curriculum Consultants; Manager, Curriculum Operations; Associate Director, Academic Scheduling and Planning; Director, Marketing; Director, Institutional Research and Planning; Director, International Enrolment and Operations; Chair, Workforce Development and Part-time Studies; Chair, Interdisciplinary Studies; Program Quality and Review Manager; and Manager, Degree Quality.

Following approval from PPRC, the package is reviewed by Academic Forum (AF). AF membership includes the Vice-Presidents, Associate Vice-Presidents, Executive Deans, and Directors from across the college who lead departments in the development and implementation of academic

programs and initiatives. Additionally, the Director, Curriculum Development, Operations and Pathways maintains membership on the committee in an advisory capacity for matters specific to degree delivery and regulatory requirements.

Conestoga's School of Interdisciplinary Studies supports the development and delivery of breadth courses at Conestoga. The Chair, Interdisciplinary Studies, provides leadership regarding Conestoga's institutional strategy for breadth delivery, while the School of Interdisciplinary Studies provides expertise related to the development and delivery of newly proposed breadth courses and the breadth components of degree programs. The Chair, Interdisciplinary Studies, provides formal input through the creation of the degree approval package, and as a member of the PPRC and the Dean, School of Interdisciplinary Studies, sits on the AF committee. Their participation on both committees ensures that program development teams are aware of breadth-related opportunities, considerations and risks associated with course and/or program development.

The proposed program design is then presented to the Academic Coordinating Committee (ACC) and the Advisory Committee on Academic and Student Affairs (ACASA) for approval to develop. The ACC provides a forum for academic planning and operations within the framework of the Strategic Plan and considers academic planning and operations in the context of overall college and academic quality. ACASA is a sub-committee of the Board of Governors with the responsibility for examining and discussing all program proposals approved by ACC, making recommendations to the Board of Governors, and receiving information and updates on key initiatives within Conestoga that affect the quality of academic operations. The Board of Governors provides the final approval to develop the program and submit to the Ministry of Colleges and Universities.

Conestoga's Degree Development and Procedure Map provides an overview of degree development at Conestoga. In 2015, Conestoga's degree development process was highlighted within the *New Program Approval Practices: A summary of current typologies at Ontario colleges and universities* (Duklas, 2015), a report intended to identify best practices, funded by the Ontario Council for Articulation and Transfer.

The culmination of these collective efforts is that the BAT-CM program is organized in such a way that students can achieve the program and degree level learning outcomes within the prescribed period of study with a manageable, plausible, and well distributed workload that takes into account all of the time required of a student to fulfill the requirements of the program (*Standard 4, Benchmark 1* (PEQAB Manual 2023)). Specific details regarding program design, teaching methods, student workload and proposed assignment types are provided in Standard 3: Program

Content. Details regarding each proposed course can be found within the Course Outlines folder on the SharePoint site.

Once Conestoga receives consent to deliver BAT-CM, an annual review cycle is initiated. As outlined in more detail in Internal Quality Assurance and Development (Standard 9), Annual Program Reflection (APR) processes are conducted by the School with support from Program Review, Curriculum, and Degree Program Consultants and the Office of Institutional Research and Planning. In addition to APRs, all degrees undergo a major self-study every 5 to 7 years, also described below in Standard 9. Internal Quality Assurance and Development.

The policies and procedures that govern general program delivery and quality assurance of the delivery of the program include:

- Course Development Procedure
- Course Revision Procedure
- Program Quality Assurance Policy
- Program Delivery Procedure
- Program Review Procedure
- General Education and Degree Breadth Policy

Degree program requirements, including breadth requirements and all associated policies and procedures are communicated to students via the Student Portal, Conestoga's website, and program handbooks. Student acknowledgement of awareness of policies and procedures is captured in the Student Portal (Student and Consumer Interests (Standard 11, Section 11.2)).

4.1.2 Breadth Courses

The Chair of the School of Interdisciplinary Studies is instrumental in the planning and delivery of breadth courses. The majority of breadth courses available at Conestoga are developed specifically for baccalaureate study and to align with breadth outcomes as outlined in the PEQAB manual. Additionally, degree program chairs from across the college consult with the Chair, Interdisciplinary Studies, to confirm which core courses, created for baccalaureate programs at Conestoga, may be appropriate to offer as breadth to students enrolled in other degrees. These courses are delivered as scheduled within the core degree programs and are available to a limited number of students in the other degrees, based on capacity.

The variety of breadth courses offered is a strength of Conestoga's degree delivery. Providing a wide range of options enables Conestoga to meet the needs of a diverse student body, exposing them to knowledge and skills outside their chosen field of study. Access to interdisciplinary courses offered by the School of Interdisciplinary Studies, as well as vocationally focused courses offered by other schools across the college, contributes to the creation of community between

degree students from across all disciplines. In fact, the intentional development of interdisciplinary classes open to students from all degree programs is crucial in a cohort-driven scheduling model.

Members of the Curriculum Operations and Planning Department support the implementation of breadth offerings on the Student Information System (SIS) and the Student Portal. The SIS and Student Portal Systems – along with the Registrar's Office, marketing staff, degree program chairs, degree program coordinators and faculty – communicate breadth requirements, a menu of course offerings, scheduling, and selection procedures to the degree students. Degree program coordinators and faculty members act as student advisors and validate SIS reports which indicate that student technical and progression requirements are met.

4.1.3 Course Development

The development and delivery of courses are the responsibility of the Program Chair and Coordinator. Conestoga's Degree Quality and Curriculum departments ensure that the courses are delivered per the conditions of consent outlined by the Ministry and in accordance with PEQAB standards and benchmarks.

Course outlines and learning outcomes are reviewed with Curriculum Consultants prior to delivery. Additionally, the development of fully online and hybrid courses is supported by e-learning developers and instructional designers from the Online Learning Centre (OLC), as outlined in subsequent sections.

Course development includes the creation of an outline that identifies:

- method(s) and frequency of evaluation of student performance
- resources to be purchased/provided by students as well as classroom and equipment requirements
- textbook requirements
- learning outcomes
- a list of the faculty qualified to teach the course
- faculty qualifications required to teach/supervise the course

A dedicated Curriculum Consultant works with the subject matter expert to ensure the course description and learning outcomes are clear, appropriate to the baccalaureate level of learning, and align with the degree standard, program outcomes, and breadth outcomes of study, where applicable. They also ensure that methods of evaluation are appropriate to assessing the intended outcomes, and that the resources chosen include Canadian content, where appropriate and possible.

More information on the mapping process used to ensure alignment of courses with the degree standard, program outcomes, and breadth outcomes is outlined in 4.3.3 Course Review.

4.2 Teaching and Delivery Methods

Conestoga provides program teams with a variety of centralized resources to support the selection and execution of an appropriate course delivery method to support course, program, and degree level outcomes. Teaching methods meet the technical and progression requirements (*Standard 4, Benchmark 2a* (PEQAB Manual 2023)), and the faculty, through their teaching practices, ensure that students are successful in achieving the goals of the course and continuing in the program. The teaching methods are also suited to achieve the intended program and degree level learning outcomes (*Standard 4, Benchmark 2b* (PEQAB Manual 2023)). Theory-based learning coupled with practical hands-on experience, such as experiential opportunities, case-based learning, and capstone projects, is embedded throughout the curriculum. The mapping exercises related to learning outcomes described above encourage faculty to choose teaching methods scaffolded in complexity to ensure that students progress in an intentional fashion through the program whether in online or in-person delivery.

Conestoga supports faculty to develop teaching excellence through evidence-based learning opportunities and engage in ongoing reflective teaching practice.

Online courses are intentionally designed to ensure the virtual teaching and learning methods support all the intended learning outcomes of the course and reflect the best practices of online pedagogy to consider the needs of a diversified student body. As part of this, Conestoga places great importance in creating academic community among students and with faculty members. The course shells identify the technologies that will be used to achieve interaction between students and among students and faculty participating in the course. Required skills to effectively utilize the technology, as well as required and supplementary resources necessary for the course are also provided.

Conestoga intends **hybrid delivery** (in-person and online) with the goal of delivering up to thirty per cent online to provide flexible delivery options. Online courses will be asynchronous (100% online delivery with no assigned day or time requirements as the students complete the course) or synchronous (100% online delivery with scheduled day and time course requirements); some courses will be delivered hybrid (any combination of in-person and online components). Conestoga reserves the right to use the delivery method that best suits the course as determined through existing quality assurance processes. Students are aware in advance of the delivery mode. The faculty delivering courses in BAT-CM employ teaching methods that meet the requirements of the program, its outcomes, and the students.

Whether courses are delivered online or in-person, Conestoga ensures that teaching methods are appropriate to course content and design. Specific examples of in-person teaching methods include instruction/ lectures, simulations, workshops and seminars, independent learning, industry based projects, field work, case studies and guest speakers. Online courses are designed with the use of Brightspace tools, including discussion boards, surveys, checklists, and quizzes. Courses are also designed to include embedded interactive elements, such as online presentations, blogs, inline quizzes, inline reflections, and dynamic diagrams.

These specific design strategies incorporate a student-focused approach that allows students to have an active role in their learning process. As part of this, Conestoga places great importance in creating academic community among students and with faculty members. The course shells identify the technologies that will be used to achieve interaction between students and among students and faculty participating in the course. Required skills to effectively utilize the technology, as well as required and supplementary resources necessary for the course are also provided.

Next, the teaching methods take into account the requirements of a diversified student body (*Standard 4, Benchmark 2c* (PEQAB Manual 2023)). Conestoga encourages the use of the Universal Design for Learning Guidelines to ensure that all students can access and participate in learning opportunities. Some of the techniques to ensure all learners are reached include group discussion (whole class or student-student interaction with facilitator monitoring), learn-at-your-own-pace activities to support knowledge acquisition and retrieval, and scenario-based simulations (low to high fidelity) with opportunities for group and individual debrief.

Faculty members use technology to engage students and to provide variation in course delivery. Educational technology used in the curriculum includes audio-visuals (e.g., accessible video and podcast libraries), slides that are AODA-compliant, and laboratory components. These techniques are in addition to those available to faculty within our learning management system: online quizzes, blogs, videos, collaborative discussion boards, online whiteboards etc. Conestoga College also has memberships for several web-based teaching tool apps that faculty can freely access.

Finally, the teaching methods contribute to and enhance the creation of an academic and professional community among students, as well as between students and faculty (*Standard 4, Benchmark 2d* (PEQAB Manual 2023)). The Bachelor of Applied Technology (Honours) - Construction Management development team recognizes the value of providing opportunities for students to create academic and professional communities with their peers and faculty. Opportunities for founding local chapters of national organizations will be explored that would

deepen the academic and professional community within the BAT-CM program. Current existing academic and professional communities within the School of Engineering & Technology include:

- Conestoga Engineering Society
- SAE COBRA Baja
- AutoCAD club (not necessarily SOE-specific)
- Google Developer Club (not necessarily SOE-specific)
- IEEE Student Chapter

For further information about Conestoga's breadth of Student Success Services, please see 5.4 Student Supports.

4.2.1 Online Course Development

The Online Learning Centre (OLC) is an integral partner in the planning, development, and delivery of online content. The OLC facilitates course development processes and encourages schools within Conestoga to identify online course development projects at annual planning sessions. Schools complete a course development/revision request form, as provided by the OLC, which identifies the rationale and key considerations for creating a new online course or converting an existing course to an online or hybrid method of delivery.

The requests are brought forward to Academic Forum, which oversees all activities that support quality and sustainability, and the institutional priorities of the college related to improving teaching, learning, and the quality of academic programs. Based on the strategic feedback from Academic Forum, the OLC conducts scheduled planning sessions with all departments, and prepares an institutional plan for online initiatives.

The OLC supports the development of online and hybrid courses with a team of experts in the areas of instructional design, web development, faculty training and support, learning management system administration and support, and quality assurance. The OLC works with the academic schools and faculty to ensure courses are developed according to course criteria that align with Quality Matters standards and Conestoga policy.

The OLC delivers a variety of courses, training sessions, and online resources that teach:

- navigation of the eConestoga learning management system
- instructional design models for development of strong online content, and
- the development of courses within eConestoga.

These experts are also available to all Conestoga staff through scheduled consultation times and upon request.

The OLC maintains an internal quality assurance project checklist which provides a standard set of minimum requirements for the development of online and hybrid courses. The checklist ensures alignment with the Quality Matters standards and utilized by quality assurance personnel within the OLC.

All program and course development is governed by the Program Quality Assurance Policy, Program Development Procedure, and Course Development Procedure. Online curriculum development and delivery is further governed by the Online Learning Technology Policy. These policies and procedures can be found at https://www.conestogac.on.ca/about/corporate-information/policies, under Academic Administration.

4.2.2 New Delivery Strategies – Classroom Enhanced, Hybrid, and Online Delivery

As previously described, Conestoga conducts sustained, evidence-based and participatory inquiry to determine whether courses are achieving intended learning outcomes. In addition to the program and course development and revision processes described above, Conestoga's Online Learning Centre (OLC) provides additional resources when developing a course or program for hybrid or online delivery.

Conestoga, with guidance from the OLC, ensures that hybrid and online courses meet standards from the Quality Matters Higher Education Rubric (please see www.qualitymatters.org). The rubric requires that:

- the delivery method is appropriate to the course content and design,
- faculty and students have the necessary resources – including technological resources and minimum technical skills – to promote effective learning, and
- learning activities and technologies provide opportunity for interaction and support active learning.

The Quality Matters standards and rubric reflects many of the PEQAB benchmarks for online delivery as they relate to the program delivery, capacity to deliver, program evaluation, and student protection standards.

Conestoga may update courses to include hybrid or online course delivery where appropriate over a given degree program's period of consent. The delivery methods of all Conestoga courses are appropriate to course content and design and are reviewed during annual program reviews to ensure continued quality and effectiveness.

The Online Learning Technology Policy helps to govern specific requirements related to online learning, in conjunction with standard program and course quality expectations outlined in the Program Quality Assurance Policy, Program Development Procedure, Course Development

Procedure, Program Delivery Procedure, Program Review Procedure, and Course Revision Procedure. These policies and procedures can be found on Conestoga's corporate information page at https://www.conestogac.on.ca/about/corporate-information/policies, under Academic Administration.

4.3 Faculty Onboarding, Reflective Practice, and Teaching Philosophy

Conestoga prides itself on providing onboarding support to incoming faculty, as well as ongoing professional development during a faculty's tenure with the college. As outlined in further detail in Faculty Training, faculty are supported in the continuous development of their teaching methodology. In addition, Conestoga's Degree Quality office with Teaching and Learning has developed a micro-credential specific to degree teaching and learning to support faculty in understanding the unique opportunities associated with degree level learning. The courses in this micro-credential ensure the faculty teaching methods meet technical and progression requirements and are suited to achieve the intended program/ degree level learning outcomes. The courses also support the development of curriculum that takes into account the requirements of a diverse student body and contribute to the development of community and collaboration between degree faculty and students.

The teaching methods are selected to meet the technical and progression requirements (*Standard 4, Benchmark 2a* (PEQAB Manual 2023)), and the faculty will, through their teaching practices, ensure that students are successful in achieving the goals of the course and continuing in the program. Conestoga supports faculty to develop teaching excellence through evidence-based learning opportunities and engage in ongoing reflective teaching practice. Faculty are encouraged to use outcomes-based teaching practices to support students in applying and integrating the knowledge and skills acquired.

Whether courses are delivered online or in-person, Conestoga is dedicated to ensuring that the teaching methods are appropriate to course content and design. Specific examples of in-person teaching methods include instruction/ lectures, simulations, workshops and seminars, independent learning, industry-based projects, field work, case studies and guest speakers. Online courses are designed with the use of Brightspace tools, including discussion boards, surveys, checklists, and quizzes. Courses are also designed to include embedded interactive elements, such as online presentations, blogs, inline quizzes, inline reflections, and dynamic diagrams.

These specific design strategies incorporate a student-focused approach that allows students to have an active role in their learning process. Group projects are encouraged, where appropriate, and can be conducted virtually or in-person. Courses and course shells incorporate resources on

virtual and in-person etiquette, communication expectations, and other helpful guidelines such as how group work takes place within an online environment.

Courses are designed intentionally to ensure the teaching methods will be suited to achieve the intended program and degree level learning outcomes (*Standard 4, Benchmark 2b* (PEQAB Manual 2023)). Theory-based learning coupled with practical hands-on experience, such as experiential opportunities, case-based learning, and capstone projects, is embedded throughout the curriculum. The mapping exercises related to learning outcomes described above encourage faculty to choose teaching methods scaffolded in complexity to ensure that a student progresses in an intentional fashion through the program whether in online or in-person delivery.

The teaching methods reflect best practices in pedagogy to take into account the requirements of a diversified student body (*Standard 4, Benchmark 2c* (PEQAB Manual 2023)). Conestoga encourages the use of the Universal Design for Learning Guidelines to ensure that all students can access and participate in learning opportunities.

Some of the techniques to ensure all learners are reached include group discussions (large group, small group). This encourages students to analyze, think critically and respond to the discussion. The discussion boards support the students in applying theory to their own experiences and furthering discussion based on readings. Faculty members use technology to engage students and to provide variation in course delivery. Educational technology used in the curriculum includes audio-visuals (e.g., accessible video and podcast libraries), interactive slides that are AODA-compliant, and laboratories. These techniques are in addition to those available to faculty within our learning management system: online quizzes, blogs, videos, collaborative discussion boards, online whiteboards etc. Conestoga College also has memberships for several web-based teaching tool apps such as Mentimeter and Padlet that faculty can freely access.

Finally, the teaching methods contribute to and enhance the creation of an academic and professional community among students, as well as between students and faculty (*Standard 4, Benchmark 2d* (PEQAB Manual 2023)). Cognitive and peer learning impacts the success of our students. A sense of community and positive classroom climate are related to student learning, persistence, and satisfaction. This sense of community is fostered by creating a positive learning climate in and out of the classroom. Faculty will engage with students by accepting questions and discussion, addressing students by name, and letting students know how to contact them. Online courses identify the technologies that will be used to achieve interaction between students and among students and faculty participating in the course.

4.4 Student Assignments and Assessments

Student assignments and assessments, whether delivered in person or via online technologies, result in reasonable student workloads (*Standard 4, Benchmark 3a* (PEQAB Manual 2023)). To address student workload, the program has been carefully scaffolded to adhere to a reasonable full-time load as identified by Ministry standards as illustrated in the Academic Course Schedule 1.

Keeping a reasonable number of hours of in-class instruction provides students with sufficient time to complete their assignments and projects. The faculty team collaborates before each term to ensure that students' major assignments are not due at the same time. Some courses focus on smaller assignments distributed over the term to reduce the overall number of assignments due at mid- and end of term.

In the event that a student is at risk of failing or not completing a course, students are encouraged to reach out and faculty are to contact the student and program co-ordinator and/or the academic advisor so that the student can work on strategies to succeed. Each course must provide at least 40% of the student's grade by mid-term to support student success. Furthermore, all the courses have multiple methods of evaluation, with none greater than 40%, so that learners receive feedback on their learning at several points throughout each semester.

Conestoga implements School-based Academic Advising, which provides individual support to students. This support is initiated by the student themselves or by a faculty submitting an online form to the advisor. Furthermore, the School of Engineering & Technology regularly checks students' success rates, and administrators review students' progress at specific points throughout the semester. These processes provide opportunities to proactively approach students about supports and services available to enable success in BAT-CM.

Student assignments and assessments are designed so students can demonstrate the achievement of the stated program and degree level learning outcomes (*Standard 4, Benchmark 3b* (PEQAB Manual 2023)). Assessments are structured to meet program learning outcomes with appropriate degree level academic rigour via course learning outcomes. Evaluations are intentionally designed in ways that permit formative and summative feedback to enhance students' developmental learning opportunities and to meet the needs of a diversified student body. In each course, students are provided with a variety of assessments to enhance opportunities to demonstrate knowledge acquisition and skill development. The varied nature of the evaluations ensures that knowledge is mastered and application is tested; ongoing reflection helps students to extend learning to their professional practice.

Assessments are chosen or designed with learning outcomes in mind. A variety of assessments are used in the program, for example:

- Quizzes,
- In class assignments and debates,
- Professional practice reflections,
- Reflective journals,
- Presentations,
- Professional practice midterms and final evaluations,
- Written assignments,
- Research internship evaluations,
- Research reports,
- Academic papers,
- Project work,
- Simulations,
- Group assignments,
- Midterm and final exams,
- Demonstrations and
- Virtual reality.

During the Annual Program Reflection (APR) process, all course outlines and course learning outcomes are reviewed to ensure the courses are still current and meet the needs of the students graduating from the program. This includes a discussion with a Curriculum Consultant about the type and number of assessments within a given course, and whether those assignments accurately assess the learning achieved by the student. In addition, the APR includes a review of how the courses map to program learning outcomes and degree level outcomes. The program team closely reviews each assessment in the course outlines and cross-references these with the Degree Level Standard map to ensure that the assignment type is indeed assessing the intended degree level standard.

Student assignments and assessments provide appropriate information to students about their achievement levels (*Standard 4, Benchmark 3c* (PEQAB Manual 2023)). Faculty members use formal rubrics to assess assignments and provide feedback. Student assignments are reviewed and graded within a reasonable timeframe by faculty teaching the courses, as directed by Conestoga's Evaluation of Student Learning Policy. Feedback on assignments provides support for students as they build skills over the span of the course and work towards meeting the learning outcomes from assignment to assignment.

The eConestoga learning management system that students use to access their course information, including their grades, indicates the student's achievements as well as the

percentage of completed work per course. This continuously updating metric per course always provides students with an overview of their level of achievement within a course.

4.5 Ongoing Quality Assurance Processes

After Conestoga receives consent to deliver the program, an annual review cycle will be initiated. Annual Program Reflection (APR) processes are conducted by the school with support from Program Review Consultants, Curriculum Consultants, Degree Programs Consultants, and the Office of Institutional Research and Planning. The APR covers key areas of program design, delivery, enrolment management, and resources for delivery including the consideration of degree breadth requirements. In fact, all programs are actively encouraged to consult with the Chair of Interdisciplinary Studies to ensure annual reflection on general education and degree breadth components within their programs, as demonstrated within internal APR launch communications and instructional resources that support the completion of APRs.

In additional to annual reflection processes, degrees undergo a major self-study every 5 to 7 years to support Ministerial consent renewal. Conestoga's Degree Review and Renewal Procedure Map provides an overview of degree program review at Conestoga. Degree program reviews at Conestoga take, on average, two years from initiating a major program review to delivering the program under a renewed consent term.

As with the APR, program delivery partners and service areas such as the School of Interdisciplinary Studies, the Co-op Education, Career Services and Work Integrated Learning departments, the Library Resources Centre (LRC), the Registrar's Office, the Marketing Department, and the OLC are consulted, as necessary.

Feedback is also solicited from industry and students, as discussed in the next two sections.

4.5.1 Industry Input

Each degree program conducts Program Advisory Committee (PAC) meetings a minimum of twice per year. Members of the PAC include former members of the Program Development Advisory Committee (PDAC), other academics and industry representatives, student representatives, faculty, and co-op representatives. PAC members advise on various aspects of the program and recommend strategies to meet future employer and labour market needs.

4.5.2 Student Input

Conestoga recognizes that student feedback is crucial to the successful offering of academic programs, and thus creates appropriate opportunities for students to provide input about program delivery and content (*Standard 4, Benchmark 4* (PEQAB Manual 2023)). Student feedback is considered in any proposed revisions to curricula and is regularly sought to provide

opinions, comments, and advice on the offering and revision of programs. There are a number of formal and informal routes used to gather student feedback including:

- Daily feedback to faculty during class
- Student involvement on subcommittees dealing with a variety of issues, including student rights and responsibilities and the Student Code of Conduct.
    - The Student Rights and Responsibilities Office supports students and employees in upholding the expectations outlined in Conestoga's Student Rights and Responsibilities policy and procedure.
    - Together, the policy and procedure outline the process to be followed when either a student behaviour violates their responsibilities, or when the college (staff or practices) violates a student's rights.
    - Under this procedure, students can report a concern regarding disruptive student behaviour, digital communications, college operations, and/or college employee/affiliated member conduct that has an adverse effect on the individual and/or group.
- Early Course Check-In survey, which provides faculty with feedback to reflect on courses early in the term
- Individual course evaluations, which proved formalized, direct feedback from students
- Student Appraisal of Teaching (SAT) evaluations, which provide valuable information for improving teaching at Conestoga; The Student Appraisal of Teaching (SAT) procedure guides the collection of direct feedback from students on teaching for a particular course.
- Province-wide Ontario College Student Experience Survey. This survey occurs in February, June and November, and focuses on program-level feedback to assure quality. Feedback is solicited on student satisfaction regarding programs, courses, facilities, and student services. These results are provided to the Ministry, made public, and are considered during both APR and major program review processes.
- Student participation as representatives on the Program Advisory Committees; each PAC will include one or two students. PACs follow the Program Advisory Committee Policy and Program Advisory Committee Procedure. Student representatives report on the breadth programming at the college as part of the annual student report submitted to the PAC. These reports are provided to the program teams during the APR process and shared as appropriate with relevant stakeholders.

Specific to online delivery, learner interaction and learner support are key elements of the Quality Matters standards to which Conestoga's online courses adhere. Course instructions articulate or link to:

- a clear description of technical support offered and how to obtain it,

- an explanation of how the institution's academic support services and resources can help learners succeed in the course and how to obtain them, and
- an explanation of how the institution's student services and resources can help learners succeed and how learners can obtain them.

The learning activities provide opportunities for interaction that support active learning, and the instructor's plan for classroom response time and feedback is clearly stated. Through the connections provided to academic services, student services, technical support or faculty interaction, the student can provide feedback relevant to their individual experiences.

All the aforementioned mechanisms to collect student feedback are incorporated into formal program review processes such as the Annual Program Reflections and the Degree Self-Study required by PEQAB. This ensures the feedback will be considered while program updates and curricular changes are undertaken.

4.5.3 Course Review

A collaborative approach is taken during the review of degree-level curriculum. Faculty from across Conestoga College identified as teaching into the specified degree program work with Curriculum Consultants to map their courses to PEQAB's degree level outcomes as well as unique program outcomes.

While faculty are invited to undertake these activities on an ongoing basis with Curriculum Consultants, Conestoga also provides regular workshops to degree faculty to support course development, review, and renewal. In these workshops, the faculty are guided through instructional sessions regarding learning outcomes and the mapping process before working through their course outline. Curriculum Consultants provide support and answer questions. This workshop approach provides an opportunity to educate all degree faculty, as well as develop interdisciplinary faculty relationships that will strengthen Conestoga's delivery of degree-level curriculum moving forward.

Quality assurance of the delivery of the program is ensured by our curriculum policies including:

- Course Development Procedure
- Course Revision Procedure
- Program Quality Assurance Policy
- Program Delivery Procedure
- Program Review Procedure

Standard 5: Capacity to Deliver

The organization has the capacity to deliver the quality of education necessary for students to attain the stated and necessary learning outcomes.

Established in 1967, Conestoga is Ontario's fastest growing college and a leader in polytechnic education. The college delivers a full range of career-focused education, training, and applied research programs to prepare students for success in the new knowledge economy and promote economic prosperity throughout our region and across Ontario.

Campuses and training centres in Kitchener, Waterloo, Cambridge, Guelph, Stratford, Milton, Ingersoll, and Brantford provide a growing number of students with local access to full and part-time programming. Fall 2022's full-time enrolment of over 20,000 represents a 56% increase since 2013. In 2022, full-time and part-time enrolment in degree programs was approximately 2,400 students.

As the region's only provider of polytechnic education, Conestoga plays an integral role in the success of our community: 65 per cent of our graduates remain in the area after completing their education, contributing more than $1 billion each year to the local economy. Almost 50 percent of the local adult population has accessed our services.

Conestoga delivers more than 300 career-focused programs and has more degree offerings than any other college outside of the GTA. The college is one of the province's top two providers of apprenticeship training and a leader in the provision of second career and academic upgrading programs.

Our comprehensive range of programming meets the needs of a variety of learners, providing multiple entry points and established pathways to ensure that individuals across our community can access the education they need for their chosen careers. Articulation agreements with colleges and universities around the world provide our students with ready access to additional post-secondary opportunities.

Conestoga has a proven track record of continuous improvement and success. Our students consistently achieve top honours in local, provincial, and international competitions. Our graduate employment and graduate satisfaction rates are among the highest of all Ontario's colleges. Our employer satisfaction rating has exceeded 90 per cent every year since the provincial Key Performance Indicators survey was initiated. OSAP loan default rates for Conestoga graduates are consistently among the very lowest in the province.

Conestoga's vision is to be recognized for excellence in polytechnic education. Building on our strengths, we provide a full range of programming from preparatory to apprenticeship to

diploma, degree, and advanced credentials. Our vision includes interconnected pathways to promote greater access to apprenticeship, undergraduate and graduate education, supporting student success at all credential levels at Ontario's universities and colleges. In January 2023, Research Infosource Inc., a leading source of research and development intelligence in Canada, named Conestoga among Canada's top 15 research colleges in 2022 with research income totalling more than $7 million (Canada's Top 50 Research Colleges 2022). Conestoga is among Canada's top ten large colleges for its number of paid student researchers, active research partnerships, and completed research projects (Spotlight on College Research Activity FY2021 – Large Colleges).

The proposed Bachelor of Applied Technology (Honours) - Construction Management degree is consistent with Conestoga's mission to champion innovation in education and research, to serve community needs and priorities, and to empower individuals to achieve their potential. The degree aligns with Conestoga's strategic plan in that the program will maintain a high level of academic excellence through its use of information technology, partnerships with the community, and a curriculum that meets the needs of employers for well-educated, technically competent, and highly skilled graduates. This proposed Bachelor of Applied Technology (Honours) - Construction Management program also contributes to Conestoga's values and strategic priorities, as outlined below.

Values:

Student Focus

- We create the environments for students to realize their potential and graduate as individuals who can make meaningful contributions to their communities.

Collaboration

- We work with government, industry, community, and international partners to reach our strategic goals and create a vibrant learning and working environment built on excellence, quality, and respectful interactions.

Accountability

- We fulfill our commitments to the organization and the broader college community by assuming responsibility for our individual conduct, action, and results.

Inclusiveness

- We promote and foster a college community that is characterized and enriched by equity, diversity, and inclusivity.

Innovation

- We constantly strive to improve, enhance, and rethink the programs and services we provide to achieve ongoing improvement and higher standards of performance.

Strategic Priorities:

Quality – We will demonstrate excellence in programming and services while providing an outstanding learning and working environment for students and employees.

- Continue to improve the quality of programs and support services through ongoing monitoring, review, and the application of quality assurance measures and processes.
- Continue to accelerate and leverage digital technology to enrich curriculum as well as increase availability of, and access to, programs, while differentiating Conestoga and its program offerings and enhancing program flexibility and customization to meet learner needs.
- Foster and sustain alumni relationships to provide employment opportunities for students and graduates while enhancing and reinforcing the Conestoga brand and reputation.
- Foster and support the development of a high-performing employee team that has adequate resources and is provided with ongoing training and development opportunities.
- Continue to focus on the health and wellness of students and employees to cultivate a supportive teaching, learning, and working environment.
- Provide a full range of high-quality and inclusive services to students, considering their diverse backgrounds, that contribute to their academic, personal and professional success.
- Identify and promote opportunities for engagement among members of the college community to enhance both student and organizational success.

Capacity – We will continue campus growth with enhanced access to programming for diverse learners and increased enrolment to meet the workforce needs of the communities we serve.

- Plan and prioritize campus expansion in support of Conestoga's overall growth to meet employer and workforce needs.
- Renew and enhance existing facilities to support growth and improve the quality of the student and employee experience while improving space and resource utilization.
- Continue to focus on increased domestic enrolment across all categories of programming through ongoing promotion and recruitment as well as the delivery of a broad and diverse range of courses, programs, and credentials that can be customized to meet market demand.
- Promote, grow and diversify international enrolment through increased focus and emphasis on support services and integration within the college and broader community in order to contribute to Canada's immigration goals and address current and emerging workforce needs.

- Expand market-driven programs and applied research in response to ever-changing social, economic, and market demand on employers, businesses, and industries.
- Develop in-demand graduates by expanding and leveraging programming in work-integrated, experiential, and active learning that responds to current and evolving workforce needs with a particular focus on skills development, entrepreneurship, and leadership in the green economy.
- Plan and enhance the technology infrastructure, systems, processes, and tools to support a growing network of campuses while enhancing the delivery of programs and services.

Sustainability – We will develop and enhance stakeholder relationships and partnerships and support employers in responding to changing social and economic conditions while optimizing organizational performance and supporting environmental sustainability.

- Plan and manage financial and operating resources to support the sustainable delivery of Conestoga's programs and services and enable the continued expansion of programming and services. Enhance engagement with college and community partners to support the achievement of our goals.
- Contribute to Canada's fight against climate change through the development of innovative environmental solutions for industry as well as continued efforts to improve energy efficiency, reduce GHG emissions, and implement waste reduction and diversion strategies across college operations.
- Develop and implement marketing strategies and plans that differentiate the college, reflect the brand, and drive overall growth.
- Engage proactively with employers, business, community and government partners to address evolving expectations and priorities, respond to changing workforce and community needs, and increase understanding of Conestoga's role and importance in the prosperity and well-being of regions across southwestern Ontario and beyond.
- Work with and support employers in understanding and responding to changing social, economic, and market trends and demands with a particular focus on the skilled trades and the opportunities afforded by the green economy.
- Position Conestoga as a vital component in the social and economic recovery and future development of the municipalities and regions we serve.

Since 2002, Conestoga College has received Ministry consent to deliver 19 bachelor's degree programs:

1. Bachelor of Applied Health Information Science (Honours)
2. Bachelor of Applied Technology – Architecture (Honours) – Project and Facility Management

3. Bachelor of Interior Design (Honours)
4. Bachelor of Engineering – Sustainable Design Engineering
5. Bachelor of Engineering – Building Systems Engineering
6. Bachelor of Engineering – Cyber Systems Engineering
7. Bachelor of Engineering – Electronic Systems Engineering
8. Bachelor of Engineering – Mechanical Systems Engineering
9. Bachelor of Engineering – Power Systems Engineering
10. Bachelor of Communications Management (Honours)
11. Bachelor of Business Administration (Honours) - Accounting, Audit, and Information Technology
12. Bachelor of Business Administration (Honours) – International Business Management
13. Bachelor of Commerce (Honours) – Financial Services
14. Bachelor of Community and Criminal Justice (Honours)
15. Bachelor of Design (Honours)
16. Bachelor of Early Learning Program Development (Honours)
17. Bachelor of Environmental Public Health (Honours)
18. Bachelor of Computer Science (Honours)
19. Bachelor of Applied Biotechnology (Honours)

The addition of the Bachelor of Applied Technology (Honours) - Construction Management degree will complement and add synergies to existing programming in the School of Engineering & Technology. Pathways, from programs such as the Civil Engineering Technologist program, will offer an option to students who have completed a previous credential to upgrade at an accelerated pace. Co-locating the program in the same facilities used by existing engineering and technology programs will enrich all programs through opportunities for shared learning experiences. The School of Engineering & Technology currently has consent to deliver a total of 8 degree programs, and a total of 55 engineering and technology programs across a variety of credentials.

5.1 Institutional Capacity for Bachelor of Applied Technology (Honours) - Construction Management

Conestoga currently delivers 19 degree programs and is actively involved in developing new Bachelor's degree initiatives. These actions, in conjunction with Conestoga's solid program design and delivery, smaller classes, and applied offerings, continue to attract good applicants to the various degree programs. As a result, Conestoga is confident that Bachelor of Applied Technology (Honours) - Construction Management students and graduates will be natural ambassadors for the program and for the college.

Conestoga will provide and maintain resources sufficient to develop and deliver the Bachelor of Applied Technology (Honours) - Construction Management. Labs will be equipped with the latest engineering technology and construction management training equipment to support students to connect theory to practice. The Research Office and Library resources will support construction management research for faculty and students to connect theory, research, and practice. Our focus on technology-enhanced learning through online and mobile technologies ensures that students are prepared to excel in our increasingly digital world. Conestoga's commitment to student success includes a full range of support and career advising services available to students throughout their learning journey.

Conestoga proposes to accept the inaugural cohort of the BAT-CM program in 2024. The expected enrolment for the first six years is based on Conestoga's experience with other degrees. The first students will graduate in spring 2028. *Table 11. Six year projection of cumulative enrolment* outlines the six-year enrolment projections, accounting for usual attrition rates.

Program Year	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30
1	30	30	30	45	45	45
2	-	25	25	25	38	38
Bridge Intake	-	-	0	0	0	0
3	-	-	23	23	23	36
4	-	-	-	21	21	21
Total	30	55	78	114	127	140

Table 11. Six year projection of cumulative enrolment

NOTE: Table 11 accounts for typical School of Engineering & Technology degree program attrition rates: projected attrition of 15% from Year 1 to Year 2 and from Year 2 to Year 3. Projected attrition of 5% between Year 3 and Year 4.

5.1.1 Academic and Other Staff

Conestoga provides and maintains sufficient numbers of academic and other staff to develop and deliver the Bachelor of Applied Technology (Honours) - Construction Management degree (*Standard 5, Benchmark 1a* (PEQAB 2023)). The staffing complement is listed below in *Table 12. BAT-CM Staffing Complement*.

Category	Position	Number
Support Staff	Laboratory Technician Administrative Support	1 1
Administration	Program Manager Chair	1 1

	Executive Dean	1

Table 12. BAT-CM Staffing Complement

All faculty teaching in the Bachelor of Applied Technology (Honours) - Construction Management will have a minimum of a Master's degree in a closely related field, with PhD preferred. In addition to academic qualifications, the BAT-CM program will prioritize hiring candidates with relevant professional credentials and related work experience (*Standard 5, Benchmark 2a* (PEQAB 2023)). Program faculty will also be fully oriented to the courses they are teaching and the philosophical framework of the program.

Faculty from the School of Engineering & Technology will be assigned to teach core courses in the Bachelor of Applied Technology (Honours) - Construction Management degree program. Faculty from the School of Interdisciplinary Studies will be assigned to teach non-core and elective courses. New faculty will be hired as required. *Table 13. Four Year Staffing Projections* projects the faculty requirements of the BAT-CM program, but these numbers can be adapted as necessary to appropriately resource the program. At full implementation, it is estimated that this program will require 5 additional full-time faculty members to complement the existing expertise in the School of Engineering & Technology.

Year	Cumulative Enrolment		Cumulative Full-Time Faculty Equivalents (FTE)	# of New Hires	Ratio of Full-Time Students/ Full-Time Faculty
	Full-Time	Part-Time			
2024	30	-	4	1	8:1
2025	55	-	7	2	8:1
2026	78	-	10	1	8:1
2027	114	-	13	1	9:1

Table 13. Four Year Staffing Projections

New hires for the program will be spread across the first five years of delivery of the program, with hiring of one new faculty per year. The required qualifications ensure both breadth and depth of knowledge in the program faculty, and that the program meets PEQAB's requirements for terminally credentialled faculty teaching in the program. Faculty hired will hold credentials appropriate for the courses requiring delivery and will focus on credentials in the areas of Construction Management, Architecture and Civil Engineering.

Recruitment postings will reflect the specific construction management knowledge and education required to adequately support the program design. Previous teaching experience and demonstrated experience in scholarly work are also required. Advertising for the hiring of new faculty includes postings on the college website, and may be augmented by postings in

newspapers such as The Record and the Globe & Mail, plus online at www.edujobscanada.com , www.academiccareers.com , https://www.universityaffairs.ca/, www.chronicle.com , www.ontariocollegeemployment.ca , and www.workopolis.com.

5.1.2 Learning and Information Resources

Conestoga is committed to providing and maintaining sufficient student and faculty access to learning and information resources (*Standard 5, Benchmark 1b* (PEQAB Manual 2023)). Library Services and the Teach Me Tech Lab work together to support students and faculty in the process of teaching and learning, in applied research, and in the support and delivery of curriculum.

Library Staff Services

The Library is staffed by qualified Librarians and Library Technicians. A Program Liaison provides research help, designs library instructional sessions in consultation with faculty, and produces a newsletter with news and updates relevant to the program. A website with support for instruction and curriculum is directed to faculty. Students can access online tutorials or in person help for research skills, technology assistance, evaluating resources, support with scholarly writing and citing, tech help, academic integrity and copyright.

Participation in the askON virtual reference service provides students with access to help from other college library staff when the LRC is closed.

The Manager of Information Literacy and Resources and the Manager of Client Services and Operations provide leadership and implement service standards. A Copyright Coordinator is available to respond to copyright and fair dealing inquiries from faculty members and students and to deliver instructional workshops. An Academic Integrity Coordinator supports faculty members and students in the principles and practices of academic integrity.

Library Space

Students have access to the new Waterloo Campus library, completed in 2018, the Cambridge Campus library which opened in 2011 (and was renovated and expanded in 2016), and to the Main (Doon) campus library which was completely renovated in 2015.

As their program is housed at the Cambridge campus, students in this program will most likely study at Conestoga's Cambridge campus library. The Cambridge Campus Library specializes in interior design, architecture, engineering, and information technology resources. In 2016, Conestoga completed an expansion and renovation of the Cambridge campus library, becoming a jointly operated space with the Learning Commons. The renovation added additional floor space for group study as well as room for Learning Commons staff to conduct student consultations related to math and learning skills support. The Cambridge Campus Library contains 28 computer workstations, 3 group study rooms, numerous plug-in areas, as well as

printing and scanning capabilities. Figures 15, 16, and 17 show the Cambridge Campus Library spaces.

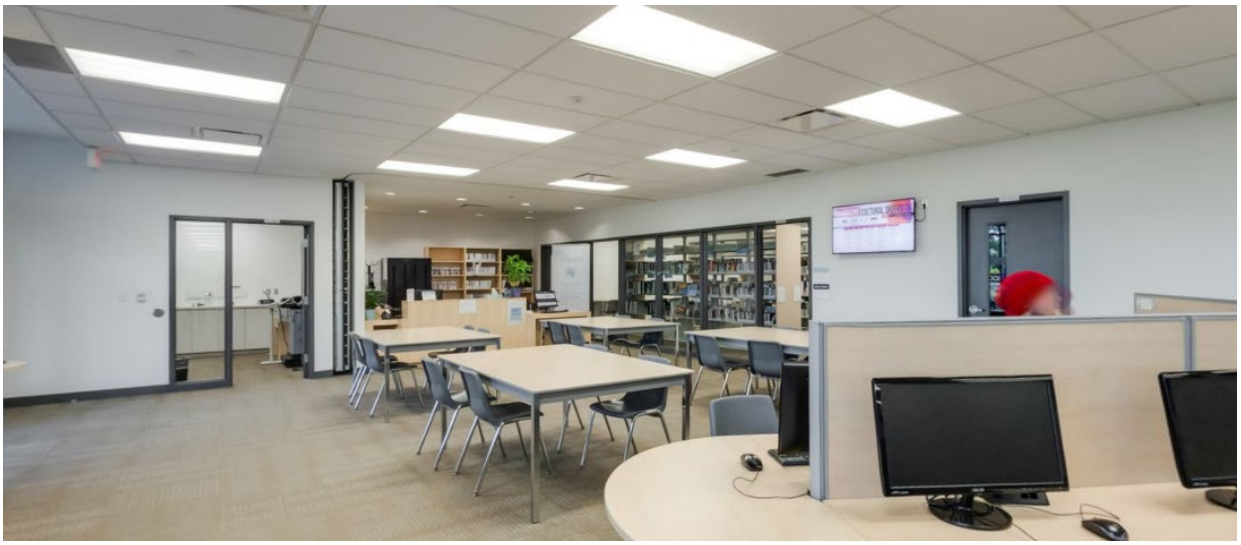

Figure 15. Cambridge Campus library work/study space

Figure 16: Cambridge Campus library work/study space

Figure 17: Cambridge Campus library physical resources

In 2015, Conestoga completed an extensive renovation of its Doon Campus Library. The new library was designed for the needs of modern students and to maximize the functionality of both its quiet study and collaborative workspaces.

The renovated Doon Campus Library contains 80 computer workstations, as well as a multitude of plug-in outlets, which include USB plug-ins. Printing and scanning are available. The Library provides upgraded wireless network access to support students accessing the network from several devices at once. Meeting rooms are equipped with wireless connectivity to video displays for group work or the practice of presentations. A 32-seat learning lab is also available for library workshops or bookings by other student service areas. The library space itself has been redesigned to maximize the functionality of both its quiet study and collaborative workspaces. The Doon campus was honoured in July 2018 with a Library Architectural and Design Transformation Award from the Ontario Library Association.

An overview of the space attributes and seating capacity of Conestoga's main libraries can be reviewed in *Table 14. Main Libraries Space Attributes and Seating Capacity*.

	Cambridge Campus	**Doon Campus**	**Waterloo Campus**
Square footage	3,200 ft^2	27,000 ft^2	4,840 ft^2
Seating capacity	78	600	122

Quiet study seating	4	103	0
Meeting rooms (bookable)	2	10	6
Weekly hours of operation	45.5	80.5	42.5
After-hours access	All seats	122 seats	All seats

Table 14. Main Libraries Space Attributes and Seating Capacity

Learning and Research Resources

Library Services plays an integral role for students and faculty in the process of teaching and learning, in applied research, and in the support and delivery of curriculum.

The services offered for students by the Library include:

- Loan of physical library resources and technology (e.g., laptops, charge cables)
- Access to online library resources, anytime, anywhere
- Research assistance (in person, or via email, chat, text or phone)
- Information literacy training provided by dedicated program liaisons in both basic research principles and resources targeted to specific fields of study
- Writing Support, including individual and group appointments, workshops and APA drop-in sessions
- Academic Integrity awareness and education
- Technology support through drop-in or appointment-based tutoring, including support for assistive technologies and alternate format production

Additional support is provided to instructors, including:

- Assistance sourcing and making available course readings and reserves
- Consultation regarding copyright and fair dealing enquiries
- Academic Integrity support
- Facilitation of the captioning of audio-video materials used in the classroom

Online Resources

The majority of the Library's learning and information resources are now available online, including 376,000 e-books, 146,000 video resources, and 160 electronic databases containing millions of articles. Students can access library resources by remote access from home or any campus. Both full-time and part-time Conestoga faculty can access the Conestoga online collection.

The following is a sample list of journals/periodicals actively collected by the Library which support programs in the School, including the proposed BAT-CM degree program:

- ACI Structural Journal
- ASHRAE Journal

- Automation in Construction
- Building Design & Construction
- Construction and Building Materials
- Energy and buildings
- International Journal of Construction Project Management

For a broader perspective, and to support the suite of elective courses, note that the Library's collection of databases includes content from many periodicals classified under subjects related to courses offered in this degree program.

The Library subscribes to the following sampling of specialized online databases that contain information related to the field of study:

- Emerald Insight - Property Management and Built Environment Collection
- Building Green
- Applied Science & Technology Full Text
- CSA OnDemand

These four products combined provide access to thousands of journal articles, reports and case studies related to the field of construction management as well as access to the complete CSA collection of standards and codes.

On-site Resources

Conestoga's Libraries contain physical resources to complement the online collection. The physical collection currently includes 22,000 books, 250 periodical subscriptions, and 1,000 audio-visual media items (e.g., DVDs). In addition, the library loans technology items, including laptops, charge cables, digital cameras, power banks, and more.

In addition, the Library provides free access to the physical resource collections of all Ontario colleges through a collaborative direct borrowing agreement. An interlibrary loan service is available in order to obtain resources unavailable through the college system. A copy of the Direct Borrowing Agreement is on file with PEQAB.

Resources by Subject

The following counts of books and media (in both physical and online formats) were generated using a search of the library's catalogue by title, subject and abstract for the specified keyword(s).

Subject Area	Books	Media
Construction	6148	5515
Construction management	234	47
Construction project management	89	7

Construction materials & methods	558	51
Facility management	303	2
Building science	13	1
Estimating or bidding	134	40
Scientific or technical writing	365	7
Construction surveying	44	1
Construction technology	457	9
CAD and architecture, buildings or facilities	170	46
BIM	124	102
Construction quality management	149	1
Construction risk management	135	1
Construction jobsite management	44	1
Sustainable, green or lean construction	579	43
Construction scheduling and planning	12	1
Building plumbing, lighting or electrical systems	70	14
Construction health and safety	7	1
Soils & foundations	28	1
Construction procurement or contract administration	17	0
HVAC and fire prevention	160	18
Structural systems and building design	49	7

Table 15. Books and Media Resources by Subject

The library's collection of databases includes content from many periodicals classified under subjects related to courses offered in this degree program.

Subject Area	Periodical Count
Construction & Building	269
Engineering	1281
Environmental Sciences	786
Business and Management	5638
Law	1865

Table 16. Database Resources by Subject

Resource Renewal

In 2015, Conestoga completed an extensive renovation of its Doon Campus Library. The new library was designed for the needs of modern students. Enhancements include the installation of a multitude of plug-in outlets, greatly improved wireless network access, and integrated wireless technology for connecting to video displays in meeting rooms. The library space itself has been redesigned to maximize the functionality of both its quiet study and collaborative workspaces.

In 2016, Conestoga completed an expansion and renovation of the Cambridge campus Library, becoming a jointly operated space with the Learning Commons. The renovation added additional floor space for group study as well as room for Learning Commons staff to conduct student consultations related math and learning skills support.

In 2018, Conestoga completed a major renovation of its Waterloo campus, which included adding a new, third library location. With a mix of lounge seating, computer workstations, group study tables and bookable collaboration rooms, the Waterloo Campus Library meets the needs of a diverse student population.

As Conestoga continues to grow, all new campuses have included new library study spaces and tech bar services, including Brantford and Downtown Kitchener campuses, and the Skilled Trades Campus most recently in 2022.

The Library is in a good position to provide students in in this degree program with access to appropriate online databases and periodicals. Over the last several years, the Library's annual budget for resources has increased significantly, demonstrating Conestoga's commitment to the provision of access to high-quality learning resources.

Year	Library Budget
2022/23	$816,302
2021/22	$770,603
2020/21	$678,774
2019/20	$634,660
2018/19	$620,310 *reduction due to new government funding of a subscription

Table 17. Library Budget by Year

Information Resources

Students and faculty can learn and discover technologies in the Teach Me Tech Lab. Learning Technology Liaisons are able to provide one-on-one training and support on a variety of digital technologies required for academic success, such as:

- Introducing computer skills (file management, internet and email, Microsoft Office 365)
- Participating in online meetings with Zoom and Microsoft Teams
- Navigating eLearning and eConestoga (Conestoga's Learning Management System (LMS) powered by D2L's Brightspace)
- Building digital assets (videos, infographics, websites, academic posters)
- Presenting and collaborating online
- Accessing eTexts and software downloads

- Using assistive and learning technologies that help with reading, writing, note taking and more.

In-person support from Tech Tutors is available for help using computers, scanning documents, troubleshooting software and more.

Computer Resources and E-Learning

Internet connectivity has become vital to learning success, and Conestoga is always looking to improve the quality and availability for students and faculty as the population grows.

A variety of resources are available to students and faculty. The IT Service Desk provides students and employees of Conestoga with technical assistance. Service areas include, but are not limited to:

- Computers on campus
- Wi-Fi on campus
- Student email. All students use Office 365 for official email correspondence. Office 365 provides a secure and stable email account with 100GB email storage, 1 TB of cloud document storage in OneDrive, and free installation (up to 5) of Microsoft Office for PC or MAC computers.
- VPN - Accessing G: drive from home
- Wireless printing. At the beginning of every semester, students receive a $50 non-refundable print balance. Students can print in any Computer Lab, Open Access Lab, or hallway kiosk available throughout the College (Printing Support).
- Student Portal
- MyConestoga
- Lab configuration
- Free software downloads via On The Hub

Conestoga commits to keeping software in the computer labs up to date.

eConestoga, powered by Brightspace (D2L), is Conestoga's Learning Management System (LMS). Conestoga provides 24-hour, 7 days per week access to LMS content and LMS technical support to students and faculty. eConestoga is being used by all faculty members for all courses, whether delivery is online or in the classroom.

The Online Learning Centre (OLC) provides an eConestoga student orientation, student FAQs, and online support resources. These webpages provide video and printable documentation to support logging into and navigating the eConestoga LMS, accessing course content, and online support to ensure students and faculty can be served by Conestoga staff remotely.

Each course shell on eConestoga meets *Essential Elements*, a quality assurance rubric to ensure that students are set up for success. The *Essential Elements* consist of:

- Course Information module with a welcome message and key information about the course and instructor,
- Instructional Plan that includes types of evaluation and the due dates,
- eConestoga Grades tool includes each evaluation and adds up to 100%,
- A module for each week, project, topic, or lab, and
- A rubric, weighting, or marking scheme for posted evaluations.

Within Course Information, there is a topic page called *Welcome to the Course*. The content on this page includes a welcome message, course learning outcomes, and information related to getting help, getting started, student conduct, and success in an online course. As a key additional support for online and hybrid courses, students are enrolled in *LEARN Online: Resources for Remote and Online Learning*. These online modules cover self-directed learning in an online environment, communicating with instructors and peers, managing and planning time for assignments, and tools and resources for support.

The newest version of the eConestoga course shells includes links to contact the instructor and to external support areas such as the Student Success, which houses services to enhance student and academic success and engagement.

Tutoring and Learning Skills

Student Success Services offers a variety of free academic supports:

- Math help is available to all students in math, statistics, and accounting courses with a team of math consultants and tutors.
- Tutoring and Peer-Assisted Learning (PAL) is available for first-year courses. Students are informed about the availability of PAL in the first weeks of the term.
- Learning skills workshops that help develop study and time management skills are available on the Student Success Portal (SSP).

5.1.3 Facilities

A variety of resources are available to students to support independent learning and academic gathering (*Standard 5, Benchmark 1c* (PEQAB Manual 2023)), including classroom, library, and computing technology lab facilities and other computing resources. The Bachelor of Applied Technology (Honours) - Construction Management will be delivered at the Cambridge Campus (Figure 18).

Figure 18: Exterior of the Cambridge Campus located at 850 Fountain Street South, Cambridge ON N3H 0A8

Classroom Space

There are enough classroom and lab spaces available to accommodate the anticipated enrollment in the BAT-CM program. There are three large lecture-style classrooms, capable of accommodating 60-171 students. Each classroom (Figure 19, Figure 20, and Figure 21) has whiteboards, and AV and IT equipment is installed in all classrooms. Students have wireless access to the internet in these classrooms. These classrooms will be used for theory courses such as:

- STAT73100 Applied Statistics
- ARCH72010 Building Sciences
- RSCH73000 Understanding Research

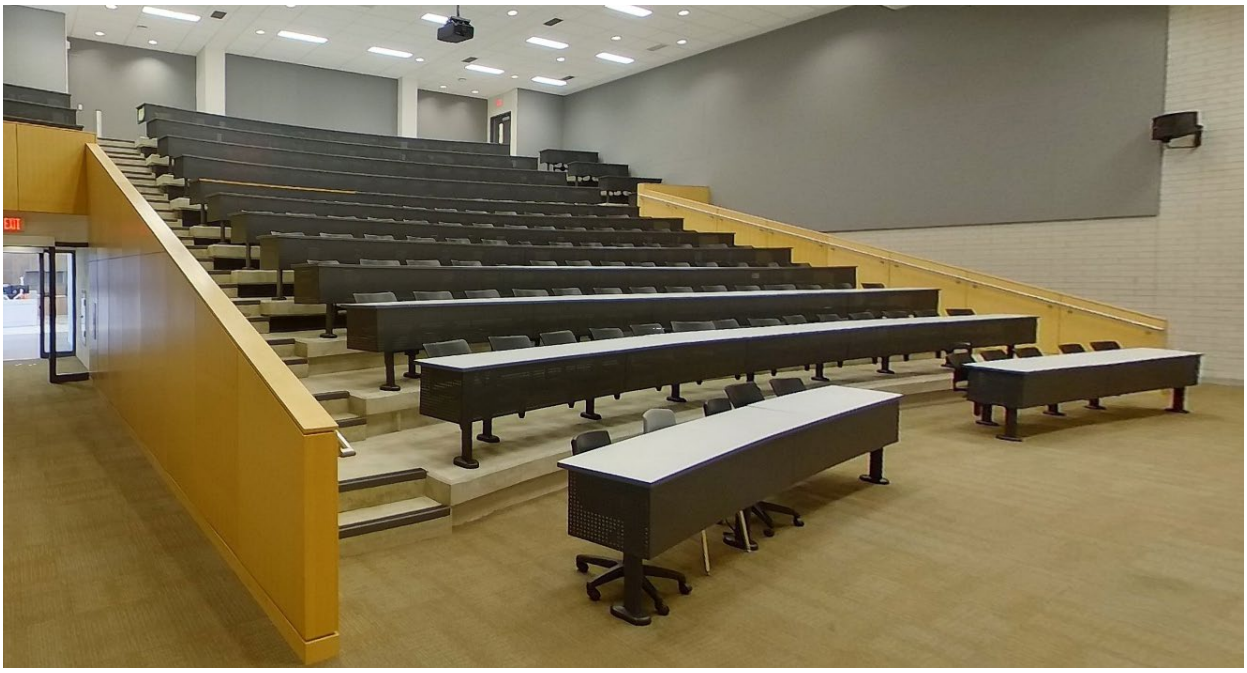

Figure 19: A1203 - The largest lecture hall on the Cambridge Campus, with a seating capacity of 171. It features two large screens at the front of the room for projecting.

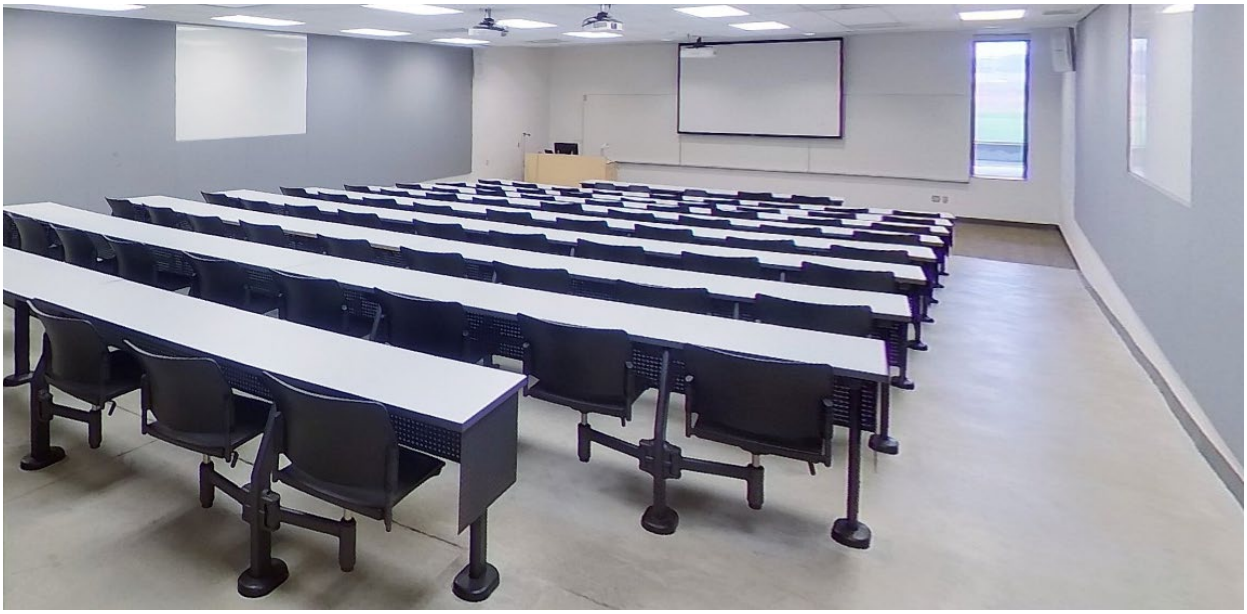

Figure 20: A1326 - A smaller lecture hall on the Cambridge Campus, with a seating capacity of 77. This lecture hall projects on three sides of the room.

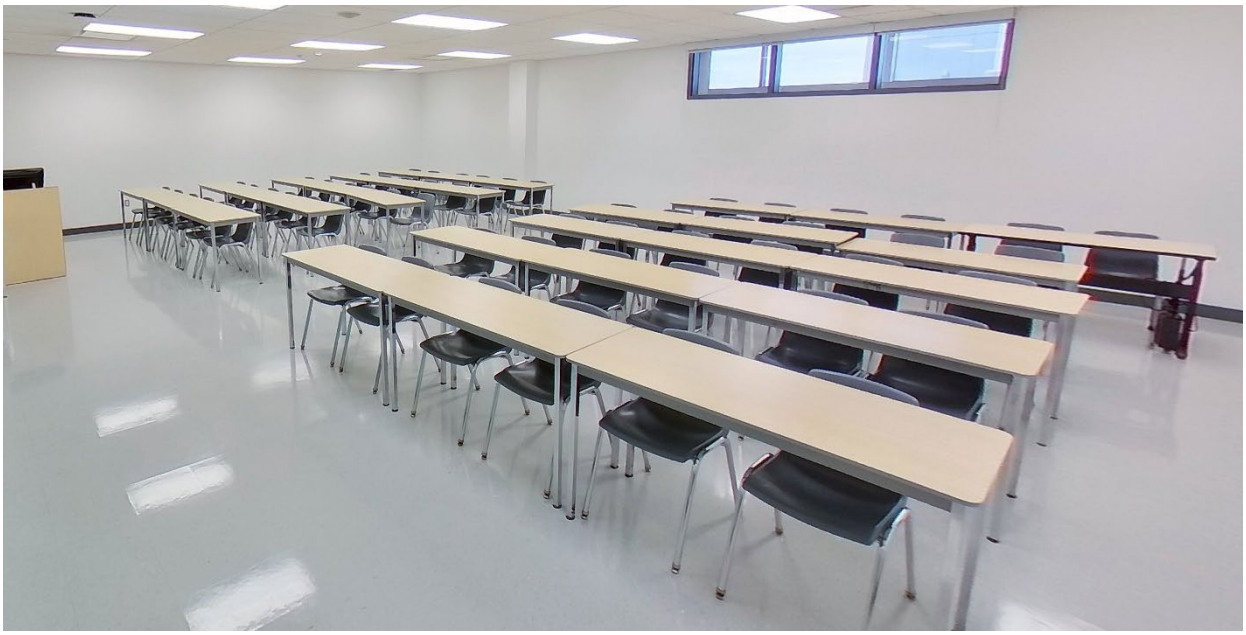

Figure 21. A2107 – The smallest lecture hall on the Cambridge Campus, with a seating capacity of 60.

Specialized Equipment, Workstations, and Laboratory Space

Conestoga has specialized labs and equipment already available for use in the Bachelor of Applied Technology (Honours) - Construction Management program. There are a variety of laboratory facilities capable of meeting the needs of the BAT-CM program (Figure 22, Figure 23, Figure 24, and Figure 25). The specialized equipment and laboratory spaces will be used for courses with hands on, applied learning such as:

- BCM7XXX5 Soils and Foundations
- BCM7XXX4 Construction Surveying
- ARCH71120 Construction Materials and Methods I
- DSGN72030 Structural System 1

The Program Team will explore new technologies and softwares to aid with design, simulation, visualization, and collaboration in building projects such as digital twins, Augmented Reality (AR) and Virtual Reality (VR). Decisions regarding new technologies introduced into the program will be made alongside input from the Program Advisory Council, so that program content is in alignment with trends in industry.

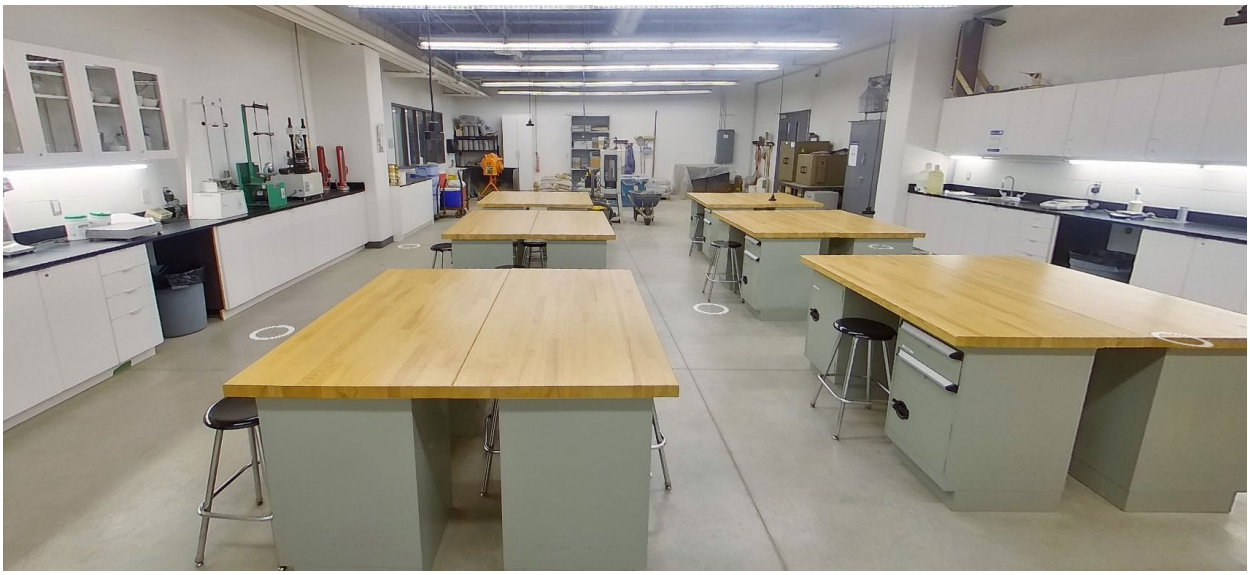

Figure 22: A1520 – Soil Mechanics Lab

Figure 23: A1520 – Construction Materials Lab

Figure 24. A1340 - Materials Testing Lab

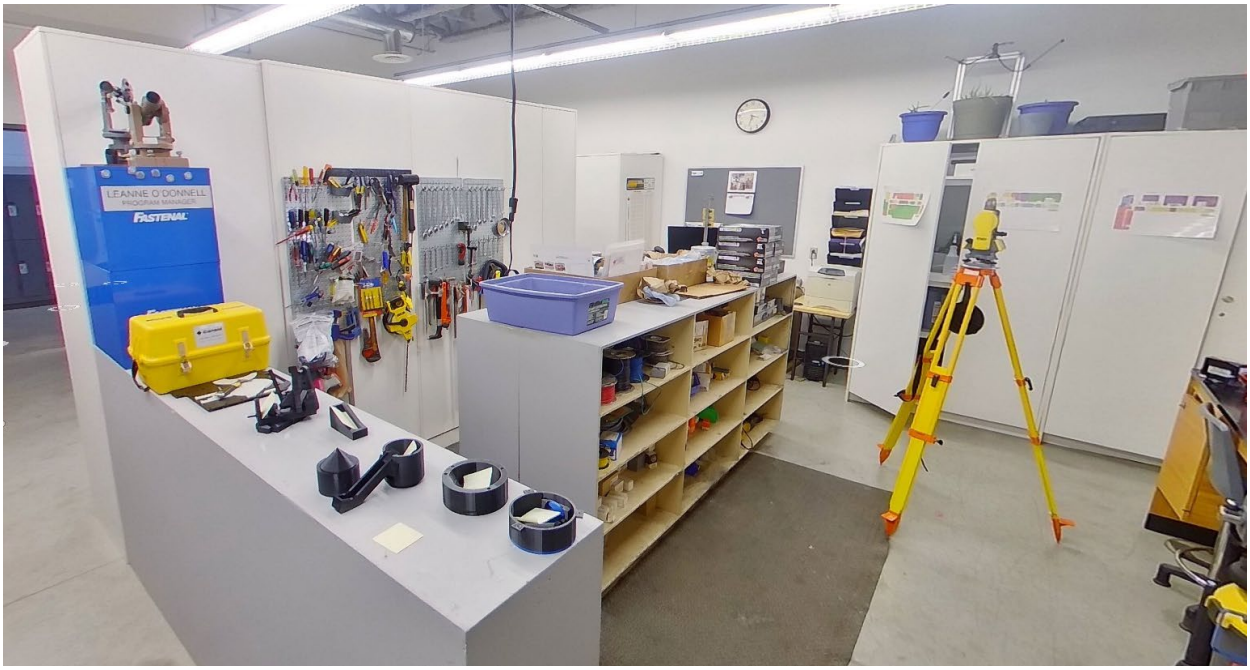

Figure 25. A1514 – Surveying Lab

To support the design and semesterly project courses, Conestoga has specialized spaces already available for the Bachelor of Applied Technology (Honours) - Construction Management program. There are two design spaces (Figure 26 and Figure 27) that will be used by the BAT-CM

program. The design spaces can accommodate 40 students each. The design spaces will be used for courses such as:

- DSGN7XXX1 Project I: Light Residential Design & Construction
- DSGN72025 Building Plumbing, Lighting & Electrical Systems design & Estimate
- DSGN7XXX7 Capstone Project I - Feasibility to Pre-construction Phase
- DSGN7XXX8 Capstone Project II - Construction to Commissioning Phase

Figure 26. A3112 – Drafting and Design Studio. Seating capacity of 40.

Figure 27. A3102 - Drafting and Design Studio. Seating capacity of 40.

Computer Resources

The Cambridge Campus has wireless internet to support use of personal devices. Students have access to an appropriate level of on-line technical resources through IT and the Teach Me Tech lab.

One open access computer lab (Figure 28) provides seating for 20 and includes nine computer workstations, a printer, and a colour copier. The Architectural CAD Lab and Classroom Computer Lab (Figure 29 and Figure 30) are classroom computer spaces that may also be used by students outside of classroom hours. The college will also continue to provide computer resources for all Conestoga students in open access computer labs and in library space on the Doon, Waterloo, and Cambridge campuses.

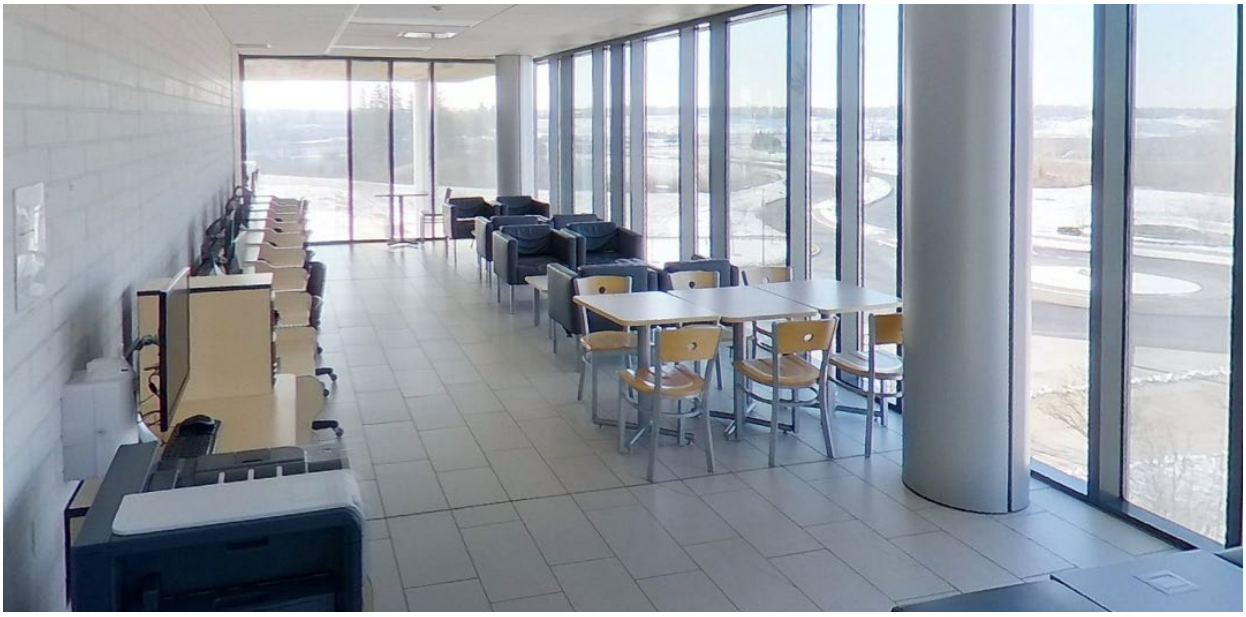

Figure 28: A2201 - Open Access Computer Lab. Seating capacity of 20.

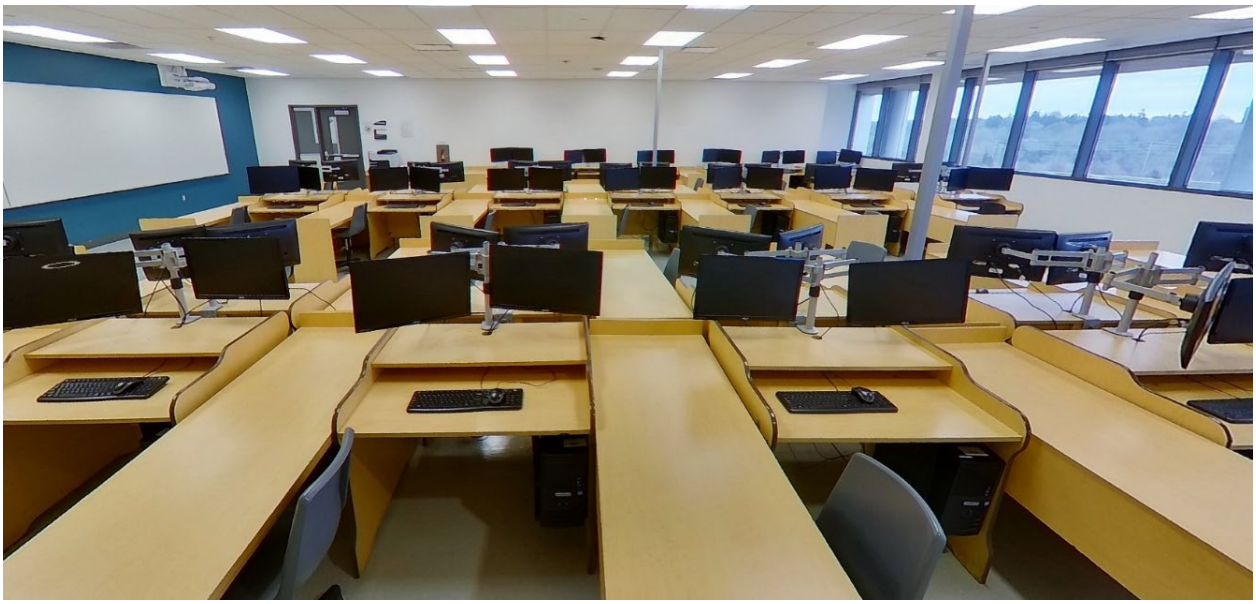

Figure 29. A3203 – Architecture CAD Lab. This computer lab has dual monitors and a seating capacity of 34.

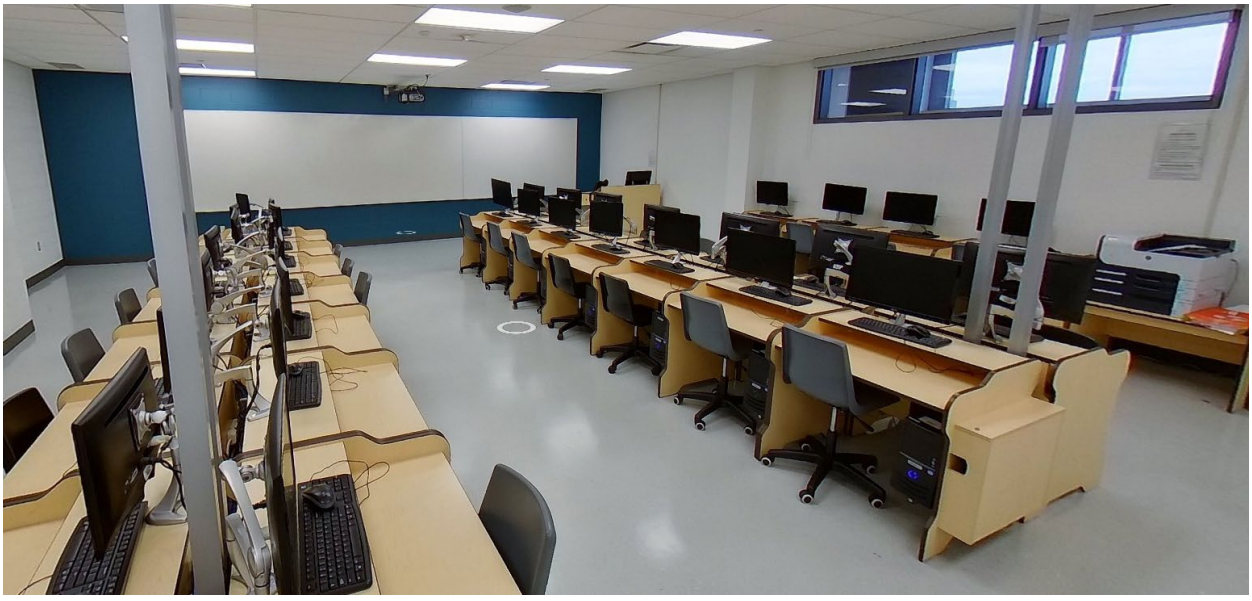

Figure 30. A2119 – Classroom Computer Lab. Seating capacity of 32.

Student Work Areas

Student work areas include a service hub (Figure 31), student lounge (Figure 32) hallway workstations (Figure 33), the cafeteria (Figure 34) and the library (Figure 15, Figure 16, and Figure 17). These common student areas can be used to access the Conestoga Library Collection and web-based resources. Lockers are also available for students on site (Figure 35).

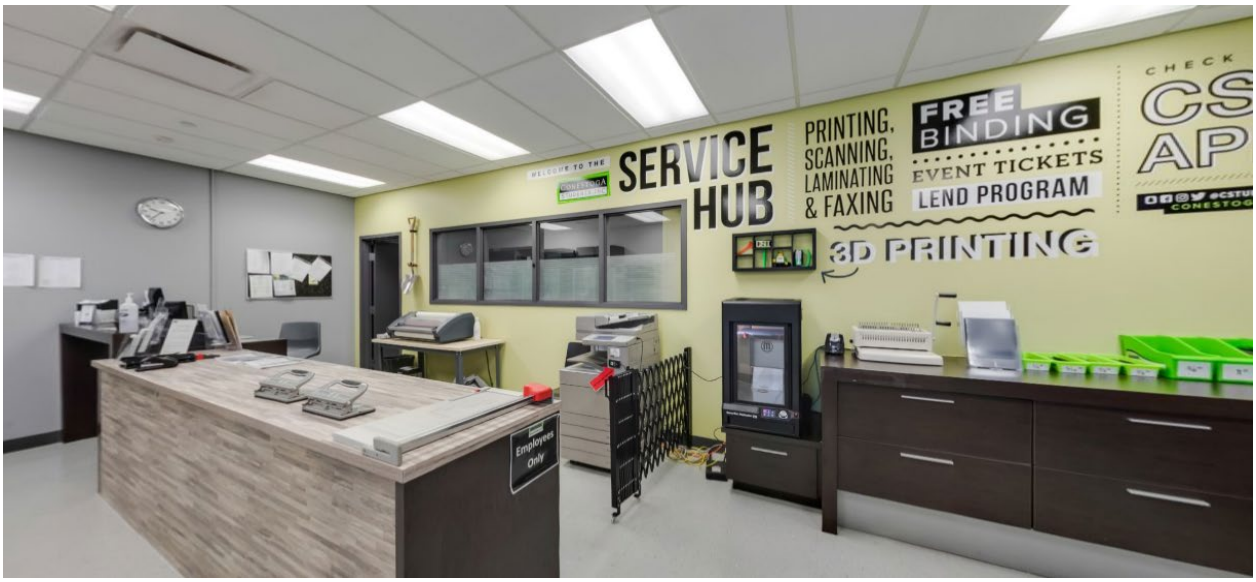

Figure 31: The Cambridge Campus Service Hub

Figure 32: Student recreation lounge space – The Cave

Figure 33. Third floor hallway. Recliners, as well as tables with chairs (not pictured), are available in most hallways of the Cambridge Campus for additional student use.

Figure 34. The Cambridge Campus Cafeteria

Figure 35. Lockers at the Cambridge Campus

Resource Renewal and Upgrading

Conestoga continues to achieve the institutional vision for leadership in polytechnic education to meet the needs of learners, industry, and communities served, even with the effects of a global pandemic. Fall 2022's full-time enrolment of over 20,000 represents a 56% increase since 2013. In 2022, full-time and part-time enrolment in degree programs was approximately 2,400 students.

Conestoga continues to expand opportunities and facilitate access to programming for all prospective students. Language training and upgrading programs, the establishment of additional pathways between programs, and enhanced services to support student success provide new opportunities for individuals from diverse backgrounds to access programming and achieve their potential. Innovative new programs and partnerships, such as the Professional Cheesemaking program, delivered under the new Centre of Excellence for Cheesemaker Training in partnership with the Ontario Dairy Council and La Cité College, offer students current programs for in-demand industries.

The library acquires new books, media, and resources each year to accommodate the needs of new programs. Over the last several years, the library's annual budget for resources continues to

increase, demonstrating Conestoga's commitment to the provision of access to high-quality learning resources:

Year	Library Budget
2022/23	$816,302
2021/22	$770,603
2020/21	$678,774
2019/20	$634,660
2018/19	$620,310 *reduction due to new government funding of a subscription

Table 18. Library Budget by Year

Anticipated yearly upgrading and maintaining physical and electronic resource subscriptions are $3,000 for books/e-books and media, $3,000 for standards, and $3,000 for serials-based database subscriptions. The resources purchased with these funds bring the library's collection in the applicable subject areas in line with other colleges and universities that offer similar undergraduate programs.

The new Welcome Centre at the Doon campus provides more centralized access to academic and career advising and other college services. Beginning February 22, 2016, students gained access to an expanded 35,000 square-foot fitness and recreation centre, developed in partnership with Conestoga Students Incorporated (CSI) following a student survey to determine student needs and expectations for health and wellness facilities. Additionally, a new student wellness space was opened on the Doon campus in November 2018. This space provides a calm, quiet area that offers individual peer support, peer group workshops, and private rooms for meditation and relaxation. In 2019, Conestoga renovated a large public space under the Doon library to create more private spaces for students to work and network in groups.

In applied research, Conestoga has continued to develop new labs, new resources, and new opportunities for students and partners. Established centres of expertise for students, faculty and community partners at Conestoga include the Smart Manufacturing and Advanced Recycling Technologies (SMART) Centre; the Craig Richardson Institute of Food Processing Technology; Canadian Institute for Safety, Wellness & Performance; the Magna Centre for Supply Chain Excellence; the Conestoga Entrepreneurship Collective; and the Canadian Institute for Seniors Care. A highlight for the School of Engineering & Technology, Canada's Natural Sciences and Engineering Research Council invested $2.3 million from 2014 to 2019 into the SMART Centre to accelerate innovation and support the region's manufacturing sector.

Conestoga has continued to invest in new learning spaces and campus expansions in alignment with its strategic plan to *plan and prioritize campus expansion in support of Conestoga's overall*

growth to meet employer and workforce needs. Conestoga's Downtown Kitchener Campus (DTK) opened initially in January 2020 with a slate of business programming that served approximately 1,000 students at launch. It has since expanded to include programming from the School of Applied Computer Science & IT, the School of Workforce Development, and the School of Creative Industries. Meanwhile, Conestoga's purpose-built Skilled Trades Campus in Cambridge opened in Fall 2022 with a 322,000 square foot building housing more than 150,000 square feet of shops and lab space to consolidate apprenticeship and post-secondary programs in industrial/manufacturing and construction trades.

The Office of Research Services (ORS) is the central hub for research partnerships among industry and community partners, faculty, and students. ORS offers comprehensive support throughout the entire research project lifecycle, from initial engagement to project management, ORS ensures successful project outcomes by bringing together multidisciplinary expertise, state-of-the-art resources, and collaboration to tackle real-world challenges and address the needs of industry. Through research, faculty are enabled to apply a theoretical and hands-on approach to solving industry challenges, while students gain valuable experiential learning opportunities that help them jumpstart their careers and enable them to meet workforce demands. More information about the supports offered by ORS can be found in 5.2.1 Faculty Scholarship.

5.2 Faculty Qualifications

All faculty teaching in core courses will have professional credentials and related work experience (*Standard 5, Benchmark 2a* (PEQAB Manual 2023)). In addition, the faculty facilitating core courses will hold an academic credential at least one degree higher than an Honours Bachelor's degree (*Standard 5, Benchmark 2b* (PEQAB Manual 2023)). Conestoga underwent a regularized non-core/breadth capacity review in August 2020, and the Board recommended (October 16, 2020) that Conestoga be exempt from a non-core/breadth review for seven years.

All full and part-time faculty teaching core and non-core courses in the Bachelor of Applied Technology (Honours) - Construction Management degree will have completed a minimum of a Master's degree, with PhD preferred. Courses not categorized as core or non-core such as Guided Career Management in Canada (GCM70000), Co-op and Career Preparation (CEPR71050) and Conestoga101 fall outside of this requirement. Conestoga supports faculty who wish to pursue their PhD through reduced teaching loads. A PhD is the preferred qualification for future hires to support Conestoga's emphasis on applying research, theory, and critical thinking skills to construction management problems.

Core faculty in the program hold credentials such as: M. Arch, PhDs, and MBAs, and are assigned to courses appropriate to their credential and area of study. All CVs are included in Appendix I. Faculty CVs. Conestoga College has on file and available for inspection, for all faculty and staff

whose CVs are included in this submission, signatures that attest to the truthfulness and completeness of the information contained in their CVs and agreeing to the indirect collection of their personal information for PEQAB and the inclusion of their CVs in any documents/websites associated with the submission, review, and final status of the application.

At least 50% of the students' experience in the main field of study will be in courses taught by a faculty member holding the terminal academic credential in the field (*Standard 5, Benchmark 3* (PEQAB Manual 2023)). The highest academic credential for Construction Management is a PhD. Table 19 illustrates the percentage of the student experience delivered by faculty with the highest academic credentials calculated by program hours. Co-op, Guided Career Management in Canada (GCM70000), Co-op and Career Preparation (CEPR71050) and select preparatory courses (Conestoga 101), as well as unspecified breadth electives are excluded from this count. New faculty hired will have the appropriate credential for the course assigned.

	Core	Non-Core	Total
Total # of applicable* hours	2,212	336	2,548
Total # of applicable* hours delivered faculty with highest credential	1372	210	1582
Total % of applicable* hours delivered by faculty with highest credential	62%	63%	62%

Table 19. Proportion of student experience delivered by faculty with highest academic credential, calculated by number of hours in the program.

**Does not include WIL, select preparatory courses, or unspecified breadth electives as explained above.*

5.2.1 Faculty Scholarship

Conestoga provides a solid infrastructure for faculty to engage in a level of scholarship or research sufficient to ensure their currency in the field (*Standard 5, Benchmark 2c* (PEQAB Manual 2023)).

Conestoga's applied research initiative supports student learning and helps area businesses grow, innovate, and improve their productivity. Conestoga is tri-council approved, eligible for funding from NSERC, SSHRC, and CIHR, and the first college in Canada to host a CIHR Industrial Research Chair for Colleges. Conestoga is ranked among Canada's top 15 research colleges. In 2021-22, Conestoga completed 576 research projects, engaging 360 faculty and staff and 4,481 students in applied research activities. Also in 2021-22, the college was awarded $1.8 million in new funding and held a portfolio of more the $37 million in research funding. The Office of Research Services (ORS) supports in identifying funding sources, applying for funding, and

developing research partnerships with industry and/or community partners and through the project lifecycle.

A Researcher Portal has been launched to support faculty, students, and employees who wish to engage in research projects. The portal includes information about research policies, roles and responsibilities, and links to external research funding bodies. Researchers can connect with the Office of Research Services for assistance with funding, hiring students and researchers, managing a research project, and ensuring compliance with Research Ethics Board requirements (Conestoga's Research Ethics Board, moreover, includes representation from the School of Engineering & Technology). The portal also acts as a connection point for members of the community available to collaborate on a project or researchers seeking out assistance to support their research projects.

A Fall 2022 pilot project through partnership with the ORS has provided additional research opportunities for students and faculty. This pilot project, called the Conestoga New and Emerging Research Grant (CNER-G) opened to full-time faculty across Conestoga, and has provided grant funding to support faculty researchers in the design and execution of their projects. As part of this funding, faculty will have the option of hiring a student research assistant. Research Assistants may be sourced from any School, including the School of Engineering & Technology. This pilot program is expanding for Fall of 2023, to offer CNER-G grants again, as well as CNER-G+ grants which will provide increased funding for research projects.

Another process for supporting research in the School of Engineering & Technology is through reduced teaching loads for faculty pursuing PhD studies and preparing publications. Time for scholarly activities is integrated into work assignments. All full-time faculty are released for some form of scholarly work. Areas of focus are guided by the Action Plan developed each spring during the Annual Program Reflection process. Faculty bring forward projects of interest for inclusion, which initiates most activities. Types of scholarship include a range across Boyer's Model of the scholarships of discover, teaching, integration, and application. This process has resulted in a growing range of scholarly activities.

Scholarship of Discovery

The Scholarship of Discovery poses questions and solves them with research. The author shares new knowledge with the community and/or industry.

With the requirement for future hires to have a PhD, the expectation is that there will be a greater emphasis on and output of research related to the Scholarship of Discovery.

Scholarship of Teaching

The Scholarship of Teaching and Learning contributes to pedagogy and teaching and shares best practices about reaching and teaching learners.

All faculty are involved in course and program evaluation, and thus in Scholarship of Teaching (Boyer, 1990). Faculty generate reports guiding curriculum review and revision during the Annual Program Reflection (APR). The process produces a program Action Plan; faculty or administrative leads are assigned to action items, and progress is evaluated throughout the year at faculty meetings. Course and program evaluation are also carried out through applying for accreditation (Regulation and Accreditation (Standard 7)) and renewal with the Ministry (Internal Quality Assurance and Development (Standard 9)).

Scholarship of Integration

Scholarship of Integration (Boyer, 1990) is at the heart of applied research in construction management. As an interdisciplinary program that pulls expertise from the project management, construction, engineering, and business realms, it is imperative that faculty are able to make connections across disciplines, share data and concepts with non-specialist audiences, and collaborate across disciplinary lines to create solutions.

Scholarship of Application

The Scholarship of Application applies knowledge to solve a practical problem and finds ways to make knowledge actionable in the world. All faculty are involved at some level in course and program evaluation, including this self-study, and thus contribute to the Scholarship of Application. Other unpublished contributions include the program Action Plan generated from the Annual Program Reflection (APR); faculty or administrative leads are assigned to action items, and progress is evaluated throughout the year at faculty meetings.

Faculty often contribute to consulting within the architectural industry and maintain active statuses in their relevant professional societies. These projects have direct applications to the built environment industries.

Conestoga College has on file and available for inspection, for all faculty and staff whose CVs are included in this submission, signatures that attest to the truthfulness and completeness of the information contained in their CVs and agreeing to the college's indirect collection of their personal information for PEQAB and the inclusion of their CVs in any documents/websites associated with the submission, review, and final status of the application. (*Standard 5, Benchmark 4* (PEQAB Manual 2023)).

5.2.2 Faculty Training

All faculty are adequately trained for the delivery mode (*Standard 5, Benchmark 2d* (PEQAB Manual 2023)). Faculty onboarding and continuous learning are priorities for Conestoga. Teaching and Learning Consultants deliver workshops and courses based on current trends within the postsecondary education sector. Statistics Canada explored postsecondary enrolment trends to 2031, including cultural and age-related diversity, technology, and mental health needs. Conestoga identified six themes which educators must address; the Consultants thread these themes throughout their training options:

- Active, Outcomes-Based, Experiential and Learning-Centered Teaching Practices,
- Respectful and Productive Interactions,
- Diversity and Accessibility,
- Technology-Enabled Learning,
- The Internationalization of Education, and
- The Role of the Professor: Identity, Development, and Self-Care.

To support faculty and ensure teaching methods are suited to achieve learning outcomes, all faculty teaching at Conestoga must complete before the end of the first term four courses (Teaching at Conestoga micro-credential), designed and led by Teaching and Learning Consultants and other subject matter experts:

- Active Learning Leading to Assessment at Conestoga
- Conestoga's Learning Management System (LMS) and Technologies for Teaching
- Teaching and Services at Conestoga
- Understanding Outcomes-Based Education and Curriculum at Conestoga

The courses are designed to help faculty develop teaching excellence through exploring evidence-based learning opportunities and engaging in ongoing reflective teaching practice. Part-time faculty are compensated for their time. Full-time faculty must complete six courses in the first year (including the mandatory Teaching at Conestoga micro-credential) and an additional six courses in the next two years (courses for further professional development described below).

New full-time faculty are assigned a Teaching and Learning Consultant as a mentor for their first year to answer questions and guide them. The mentor also observes them in the classroom in the first term and provides actionable feedback. All faculty at any point in their career may request teaching observations, supported by both full-time Teaching and Learning Consultants and part-time observers who are retired from teaching. Faculty may request an observation on a particular aspect of their teaching practice to improve their performance. A Chair may also request an observation of faculty, in which the observer's notes as well as the faculty's reflections

are shared with the Chair to support performance management of the faculty. Teaching and Learning Consultants also provide feedback through 1:1 coaching sessions, support revising classroom materials, and practice role playing scenarios to support the faculty's growth.

Teaching and Learning offers a variety of flexible, online courses that align with the six themes identified above. These courses contribute to a variety of micro-credentials, which can be stacked for the Post-Secondary Teaching college certificate. Faculty focus on high-impact post-secondary teaching topics relevant for the 21st century classroom or a broader range of topics based on their interests or to address professional development needs. On an ongoing basis, Teaching and Learning offers weekly, optional workshops on effective teaching covering a wide variety of topics related to teaching practices and the student experience.

Workshops are free for all employees. Full-time faculty are provided with 10 professional development days per year, and part-time faculty are compensated for attending workshops or completing micro-credentials related to teaching and learning. Tuition for micro credentials offered by Teaching and Learning is waived for Conestoga faculty and staff. Course completion is recorded on the continuing education record and reviewed during performance appraisals. Regular performance reviews are conducted by the Chair to support continual development and support of faculty.

A new micro-credential specific to degree-level teaching is facilitated by Degree Quality, Teaching and Learning, Curriculum, and Applied Research. The courses include:

- Introduction to College Degrees
- Teaching and Learning in Degree Programs
- Developing and Reviewing Degree Level Courses
- High Impact Learning
- Intellectual Engagement through Scholarly Activity

Conestoga makes it a strategic priority to support online learning delivery (Online Learning Technology Policy). Faculty are oriented to existing and new technologies and methodologies in a timely fashion and provided with regular opportunities for ongoing professional development related to course design, development, and delivery. The Online Learning Centre (OLC) is an integral part of training faculty for the online and hybrid delivery mode with a team of experts in the areas of instructional design, web development, faculty training and support, learning management system administration and support, and quality assurance. These experts are available to all Conestoga staff through scheduled consultation times and upon request. They deliver a variety of training opportunities, whether live sessions, pre-recorded webinars, or online courses such as Developing an Online Course, and provide online resources that teach:

- navigation of the eConestoga Learning Management System,
- instructional design models for development of strong online content, and
- the development of courses within eConestoga.

Teaching and Learning provides support for faculty to deliver online courses. There are five 6-hour online credit courses that faculty can choose from the micro-credentials offerings through Teaching Synchronously and Asynchronously:

- Best Practices for Asynchronous Online Learning,
- Building Community in Online Spaces,
- Creating Educational Videos for Active Learning,
- Creating Learning-Focused Interactives, and
- Sharing and Collaborating in Synchronous Meeting Platforms.

Faculty can also access one-on-one support from a consultant to discuss online teaching practices. 24/7 support from Teaching and Learning is provided through the Faculty Learning Hub.

5.3 Faculty Policies

All faculty hired by Conestoga submit evidence supplied by the granting institution of their highest academic credentials and any required professional credentials as a condition of hire. Conestoga has on file evidence of the credentials of faculty members in our Human Resources department (*Standard 5, Benchmark 5a* (PEQAB Manual 2023)). The Human Resources department verifies the credentials – be they domestic and/or international (*Standard 5, Benchmarks 5b and 5c* (PEQAB Manual 2023)).

Conestoga regularly reviews faculty performance, including student evaluation of teaching and/or supervision. Bi-annual performance reviews offer a formal opportunity for faculty to discuss collected student feedback, identify supports needed, and career plan (*Standard 5, Benchmark 5d* (PEQAB Manual 2023)). Institutional Research & Planning conducts Student Assessments of Teaching (SATs) during the first semester of teaching, and then every two years for full time faculty and as appropriate for part time faculty. Bi-annual performance reviews (Faculty Support and Development Policy) offer a formal opportunity for faculty to discuss collected student feedback, identify supports needed, and plan their career. Teaching and Learning Consultants are available to support the chair and faculty to review student feedback.

Conestoga and the School of Engineering & Technology support the professional development of faculty (*Standard 5, Benchmark 5e* (PEQAB Manual 2023)). Conestoga's full policy and procedure is laid out in the Faculty Support and Development Policy. Many of the resources provided to

promote curricular and instructional innovation as well as technological skills were described above in Faculty Scholarship and Faculty Training. Funding is also available to support faculty to present at academic and professional conferences (Professional Development Funds).

Conestoga specifies faculty teaching and supervision loads, as well as availability to students (*Standard 5, Benchmark 5f* (PEQAB Manual 2023)). Faculty-employee relationships are supported by a collective agreement that addresses limits on teaching workload and clarifies required Chair/faculty workload related communication processes. Faculty-employee relationships are supported by a collective agreement that addresses limits on teaching workloads (Article 11 of the Academic Employees Collective Agreement). No more than four different course preps are assigned to faculty in a given week (§11.01 D 2), and hours for preparation are determined based on the faculty's experience with the course (§11.01 D 1). Each faculty member is allotted a minimum of four hours for routine out of class assistance to individual students (§11.01 F 1).

The collective agreement clarifies the Chair/faculty workload-related communication processes. The Chair will meet with each faculty member three times per year to discuss preferred teaching assignments for the subsequent semester, and *per* the collective agreement, each faculty member receives a document six weeks in advance of the semester confirming teaching assignments and teaching offloads for special projects or scholarship. Both parties sign off the agreement, and amendments are made as situations change.

5.4 Student Supports

The students in the Bachelor of Applied Technology (Honours) - Construction Management degree program will have full access to all Conestoga services that support student learning and success (*Standard 5, Benchmark 6* (PEQAB Manual 2023)). Descriptions of these services are provided in the table below.

Support Service	Brief Description of Service
First Nations, Metis and Inuit	Be-Dah-Bin Gamik - Place of New Beginning provides a direct link to resources, including cultural and academic support, to overcome issues and barriers faced by Indigenous post-secondary students. Be-Dah-Bin Gamik has three main goals: 1. Ensure First Nation, Metis and Inuit student success 2. Create a relationship between the Indigenous community and the college

	3. Provide support to Conestoga College in understanding of First Nations, Metis and Inuit peoples and issues. Be-Dah-Bin Gamik is a warm, welcoming, and comfortable environment that assists students with a smooth transition to college life by providing ongoing student support. The services include social and cultural events and activities, traditional counselling services, Elders-in-Residence programs, and the Indigenous Student Circle. Conestoga College is committed to the process of reconciliation and support for Canada's Indigenous people and working towards meeting the calls to action provided in the *Honouring the Truth, Reconciling the Future*, the 2015 report of the Truth and Reconciliation Commission of Canada.
Accessible Learning	Students with permanent and temporary disabilities can obtain support through Accessible Learning in Student Success Services. Accessibility advisors work with students to develop a success plan that considers their goals and the impact of their disability on college life. The advisor will help to communicate necessary accommodations to faculty. Accessible Learning works closely with the Test Centre and the Teach-Me Tech Lab to provide access to alternate format materials, testing accommodations and adaptive technology for students who require it. Accessible Learning also supports the broader student population through promotion of universal design for learning (UDL) and access to learning technology.
Alumni Services	Our alumni community represents a wealth of opportunities and resources for both our graduates and our students. From employment opportunities and applied research partnerships to mentoring and social engagement, there are countless industry experts and experienced professionals within our alumni community who are willing to share their stories and insights with the next generation of Conestoga graduates. For more information, contact the Alumni office. **Alumni Recognition** Conestoga has been recognizing outstanding graduates with Alumni of Distinction Awards since 1997. Chosen by a nomination process, recipients demonstrate professional success, achieve public recognition, or contribute to their industry or community. All Conestoga graduates are eligible to be nominated for an Alumni of Distinction Award. If you know Conestoga graduates who are making exceptional contributions to their businesses or the community, please consider nominating them for an award.

Bookstore	The Bookstore has locations at the Doon, Waterloo, Guelph, and Downtown Kitchener campuses. The Bookstore exists to excel at providing the right products that aid students in their academic success, to enhance the student experience, and to positively contribute to Conestoga College. The Bookstore is a student source for textbooks, course materials, and school supplies. The Bookstore carries a wide range of Conestoga College crested clothing and giftware. Students can also visit the Doon Campus Bookstore to purchase and load their Grand River Transit EasyGo Pass. Conestoga's Bookstore has made it even easier to get a personalized booklist via the Bookstore website and driven by the Conestoga Student Portal; where, once a student is logged in, they will be able to see a personalized booklist corresponding with courses in which they are enrolled.
Conestoga Career Centre	The Career Centre at Conestoga is your one stop for personalized support. Services and resources are available at no cost to the job seeker or graduate. We can help you meet your job goals. Connect with us if you want to receive assistance with: • Finding new employment and career opportunities • Creating a personal plan • Gaining a competitive edge by connecting with Conestoga-affiliated employers • Understanding the job opportunities in your local area • Launching your career • Accessing free technology including computers and printers • Completing applications to access financial incentives for returning to school • Exploring training options to fit your needs • Strengthening your skills with technology and how to make the most of it while looking for work On-campus locations are available in Kitchener, Stratford and Waterloo. All are welcome. Conestoga provides itinerant services in Elmira, New Hamburg, Wellesley, and throughout Perth and Huron Counties.

myCAREER Services	Current students and graduates can login to the myCAREER portal to book an advising appointment, register for a workshop, view hundreds of job postings, and access a wealth of career related resources. Advisors can assist in developing a plan of action to meet career objectives, using a solutions-focused approach. Services include: career assessment, exploration and planning; job search strategies, skills and resources; employment preparation such as resume and cover letter development, interview and networking skills, and more.
Conestoga Entrepreneurship Collective	The goal of the Conestoga Entrepreneurship Collective is to empower and inspire students, graduates and alumni to successfully participate in the innovation economy and develop new businesses within the Waterloo Region entrepreneurship ecosystem. Conestoga community members can choose from multiple pathways within the Entrepreneurship Collective. The Venture Lab is a business incubator for new ventures that provides free coaching, mentorship and connections from accomplished entrepreneurs, industry experts and community champions. The Gig Lab is a one-of-a-kind business incubator just for freelancers that provides coaching and mentorship to support the development and launch of freelance businesses. The Sales Lab is a finishing school for B2B sales providing students that are passionate about selling with personal coaching and industry connections to begin their sales career. A range of educational opportunities, resources and events provide ways to start the entrepreneurship journey.
Co-operative Education	Co-op students have access to myCAREER, an online program that supports their co-op job search needs. Current students, recent grads, or Alumni can access myCAREER for up-to-date co-op and career development information. All co-op students take a mandatory co-op prep course, a comprehensive career development course that prepares them for employment, assistance with resumes, cover letters and mock interviews as required for work term recruitment. Co-op Advisors provide personal assistance to co-op students and employers and use myCAREER to support the job search process. Employer Relations Officers facilitate the student application and selection process, including posting job openings, supporting application completion and arranging interview schedules.

	Employer Relations Consultants work directly with employers to develop co-op job opportunities related to students' fields of study.
Conestoga Students Inc.	Conestoga Students Inc. (CSI) is the official student association of Conestoga College and represents the interests of all CSI fee-paying students. From academic and wellness supports, to events and get involved opportunities, CSI focuses on helping students own, support and upgrade their student experience!
Early Childhood Education Care Centres	Conestoga College operates seven childcare centres throughout Waterloo Region, one on Doon Campus, one at Waterloo and five in partnership with the local school board, located in public elementary schools. In addition, the college has a unique partnership with Six Nations to operate an Indigenous based childcare centre at our Brantford campus. The centres operate as an integral part of the Early Childhood Education Program and reflect the philosophy taught to the Early Childhood Education students. The centres are staffed by Early Childhood Educators who are graduates of college and/or university level programs. In addition, student teachers from Conestoga's Early Childhood Education Program participate under the direct supervision of staff and faculty. The childcare centres are open to college students, college employees and members of the local community.
Early Childhood Education Professional Resource Centre	Conestoga operates the only Early Childhood Education Professional Resource Centre located at a post-secondary institution at our Doon Campus. Initiated through community partnership with regional funding, the facility supports on-going professional learning and development of all individuals involved in the field of early learning and care across the region. The Centre includes an abundance of curriculum resources, books, journals, and articles related to the early learning and care, and offers monthly workshops, research symposia, and conferences.
Student Financial Services	Post-Secondary education is an investment in a student's future. Effective planning and budgeting ensure students can focus on their studies, instead of their finances, while in school. Student Financial Services assists by providing students with information and resources on how to finance their education.
Medical Care Clinic	The Medical Care Clinic is part of Student Success Services health and wellness offerings. Nurse practitioners, doctors and other health professionals provide quality health care service and education. Appointments at Doon Campus are open to all Conestoga students who have OHIP or other health insurance plans. Appointments can be made by calling 519-748-5220 ext. 3679.

International Student Supports	Conestoga College and the International Office offer comprehensive support services to all international students. An International Student Advisor provides advocacy and advice to international students for diverse problems including visa renewals and related issues. The International Office works collaboratively with Student Engagement to integrate international students to the campus and to Canadian culture. The international website provides international students an overview of the college, services available to them for support and success, as well as information on life in Canada.
IT Service Desk	The IT Service Desk provides students and employees of Conestoga with technical assistance. Service areas include, but are not limited to: • Computers on campus • Wi-Fi on campus • Student email • VPN - Accessing G: drive from home • Wireless Printing • Student Portal • myConestoga • Lab Configuration • Free Software Downloads via On The Hub • MSDNAA (School of Engineering & IT only)
Library Services	Library Services plays an integral role for students and faculty in the process of teaching and learning, in applied research, and in the support and delivery of curriculum. The services offered for students by the Library include: • Loan of physical library resources and technology (e.g., laptops, charge cables) • Access to online library resources, anytime, anywhere • Research assistance (in person, or via email, chat, text, or phone) • Information literacy training provided by dedicated program liaisons in both basic research principles and resources targeted to specific fields of study • Writing Support, including individual and group appointments, workshops and APA drop-in sessions • Academic Integrity awareness and education • Technology support through drop-in or appointment-based tutoring, including support for assistive technologies and alternate format production

	Additional support is provided to instructors, including: • Assistance sourcing and making available course readings and reserves • Consultation regarding copyright and fair dealing enquiries • Academic Integrity support • Facilitation of the captioning of audio-video materials used in the classroom
Mental Health Supports	Student Success Services' health and wellness areas provide a variety of mental health supports. Support is available for a variety of issues including anxiety, self-esteem, stress, relaxation and more. • Counselling appointments can be booked by calling 519-748-5220 ext. 3679. Professionally trained counsellors provide free, individual counselling appointments to fulltime students. • Group support and one-to-one sessions are also available with a peer support worker. • Mental health workshops and events are frequently offered by our team – check out what's available and sign-up on the co-curricular portal.
Residence Life & Housing	At Conestoga College Residence, the mission is to provide an environment that supports the educational and social development of our residents. Emphasized is the strong importance of student involvement and engagement on campus and within the community. Student involvement generates greater student retention. Living in residence offers the opportunity to meet people of varied races, ethnicities, classes, sexual orientations, and genders.
Security Services	Security Services mission statement is: • To work with the Conestoga Community to provide a safe and secure work and learning environment. • To promote partnerships with the college community and local organizations. • To enhance personal safety through prevention, education, and compliance. Services available include Emergency Response, General Information, Investigations, Mobile and Bike patrol, Crime prevention education, Parking - sales, assistance and enforcement, Security at Residence and Events on Campus, Monitoring of CCTV and Walksafe programs.

Student Engagement	Student Engagement supports the transition of students to Conestoga by facilitating college-wide orientation and transition programming, including a mandatory 1st year course designed to inform students of the services available to support their success. Through the coordination of the Co-Curricular Portal (CCP), Student Engagement encourages students to enhance their college experience by getting involved in their campus community and developing skills through co-curricular programs and events. Eligible opportunities are recorded on a student's official Co-Curricular Record (CCR), a document complementary to an academic transcript that recognizes and records co-curricular learning and skill development.
Student Success Advising	Student Success Advisors can help students figure out how to get things done and provide guidance on how to navigate student life. Student Success Advisors: • Provide academic advising support • Refer students to wellness and learning services • Help students understand college policies and processes • Assist in solving problems and communicating with staff and peers • And much more! Student Success Advisors are here to help! Students can fill out a form to connect with an advisor.
Tutoring and Learning Skills	Student Success Services' offers a variety of free academic supports: • Math help is available to all students in math, statistics, and accounting courses with our team of math consultants and tutors. • Tutoring and peer-assisted learning (PAL) is available for many first-year courses. If these resources are available for a class, students will about this in the first few weeks of the term. • Sign-up for our learning skills workshops on the co-curricular portal, to help develop study and time management skills.

Standard 6: Credential Recognition

While meeting particular needs, the program is designed to maximize the graduates' potential for employment and promotion in their field and (where applicable) for further study.

The Bachelor of Applied Technology (Honours) - Construction Management program has been carefully developed to maximize graduates' potential for employment and promotion in their field, and for further study. In developing this program, a variety of sources were consulted to ensure ongoing program alignment to industry need, including:

- An environmental scan of the Canadian postsecondary sector (see Duplication)
- A Labour Market Report (Appendix B)
- Industry professionals, both through the PDAC process and Conestoga's own subject matter experts in the School of Engineering & Technology

Further evidence of credential recognition is demonstrated through the existing reputation of Conestoga's degrees, and letters of support from organizations that validate the design and the types of student skills they would be interested in hiring for placement opportunities. Letters of Support are available for review in Appendix H.

Graduates of the program will be formally tracked by Conestoga's Alumni Services, who host a variety of alumni events, and administer the Graduate Satisfaction Survey at 6 months and 2 years post-graduation. Faculty program teams maintain close ties to, and build strong alumni networks with their graduates, and organize their own program specific alumni activities. From previous experiences with degree delivery, Conestoga has found that engaging with alumni provides an invaluable perspective when undergoing degree renewal and review processes.

6.1 Pathways

For graduates of the proposed Bachelor of Applied Technology (Honours) - Construction Management program, there exist a variety of relevant graduate programs which students would be qualified to pursue. The program team has identified five graduate programs, four in Canada and one in Michigan, USA (the School of Engineering & Technology has previously had its degree students accepted into Lawrence Technological University for graduate studies). *Table 20. Possible Graduate Programs for BAT-CM Graduates, based on admission requirements and subject matter alignment* provides an overview of these programs.

Institution	Credential	Academic Admission Requirements
University of Toronto	M.Eng Civil Engineering, emphasis in	Completion of an undergraduate degree equivalent to a four-year University of Toronto degree, with a minimum final year GPA of mid-B (3.0/4.0 or 75%).

	Construction Management	
Toronto Metropolitan University	MASc or Master of Project Management in the Built Environment	Completion of a four-year undergraduate engineering or science degree (or equivalent degree) from an accredited institution. Sample disciplines include architectural science, civil engineering, mechanical engineering or a related design, applied science or construction field, with a minimum GPA or equivalent of 3.00/4.33 (B) in the last two years of study.
Concordia University	M.Eng Construction Engineering and Management	Bachelor's degree in engineering or equivalent with high standing.
University of Alberta	MSc or M.Eng	A four-year undergraduate degree with a 3.0 average in the last two years of undergraduate work (or graduate work) at the University of Alberta, or an equivalent qualification from a recognized institution.
Lawrence Technological University	Master of Construction Engineering Management	A BS degree in civil engineering, or bachelor of architecture, or related fields, from an accredited undergraduate program with a minimum undergraduate GPA of 3.00

Table 20. Possible Graduate Programs for BAT-CM Graduates, based on admission requirements and subject matter alignment

6.2 Labour Market Report

Conestoga's Office of Institutional Research conducted a labour market search based on National Occupation Codes (NOCs) and programs under comparable MTCU codes. In Appendix B: Labour Market Report, a review is provided of the labour market for the National Occupation Classification (NOC 2016) codes: 0016 – Senior Managers – construction, transportation, production and utilities; 0711 – Construction Managers; 0712 – Home Building and Renovation Managers; and 2231 – Civil Engineering Technologists and Technicians. All NOC codes, according to the Canadian Occupational Projection System (COPS), are projected to be in balance on a *national* level. On a *local* level, review of Construction Managers (NOC 0711) in particular noted nearly a 20% increase by 2026. In addition, the North American Industry Classification System code reviewed (23 – Construction) indicated a 15% increase in positions locally by 2026. Graduates of the BAT-CM will be uniquely positioned to support the projected local growth in this sector.

As noted in the Labour Market report, it will be important for graduates competing for positions within these NOCs to have bachelor-level education, which will be a significant asset in the job market. Bachelor-level educated individuals will be set apart given their education and will also

be competing for different positions than certificates such as "Construction Project Management," as an example. In terms of the local job market, there is noted to be a downward turn in one NOC Code analysed (2231 – Civil engineering technologists and technicians). Given that this NOC emphasizes the civil engineering aspects of the proposed BAT-CM program, the scope of the industry within this NOC may not align with the breadth of job prospects for this group of graduates locally.

To further expand upon the information contained within the Labour Market Information report, the Program Team has looked to BuildForce Canada for a specific report on this industry and its projections for growth. Based on BuildForce Canada's 2019 report, between 2019-2028 the demand for construction labour force for both the residential and non-residential markets is forecasted on average to increase. As a niche field with few similar programs of study in Canada, the proposed Bachelor of Applied Technology (Honours) - Construction Management program will serve Ontario as well as other province's workforce needs.

6.3 PDAC

3.2 Program Advisory Committee outlines the valuable input of the Program Development Advisory Committee throughout the degree development process. To review the motions of support received by the Bachelor of Applied Technology (Honours) - Construction Management from the PDAC, please see Appendix G: PDAC Meeting Minutes. Of note, the motion of support for *the program and graduate potential for employment and further study* was carried by the PDAC.

Standard 7: Regulation and Accreditation

Programs leading to occupations that are subject to government regulations are designed to prepare students to meet the requirements of the relevant regulatory and/or accrediting body.

Conestoga will not seek accreditation for this program. There is no applicable regulatory body.

However, the program design has been intentionally structured to allow students to satisfy the academic requirements for a variety of professional certification exams including: CAPM (Certified Associate Project Manager), PMP (Project Management Professional), PMI Risk Management Professional (PMI-RMP), PMI Scheduling Professional (PMI-SP), ASQ-Quality Manager, AACE- Certified Estimating Professional (CEP), Gold Seal certifications, Certified Construction Estimator (CCE) and Professional Quantity Surveyor (PQS).

Standard 8: Nomenclature

The program nomenclature reflects the postsecondary education achieved, facilitates public understanding of the qualification, and assists students, employers, and other postsecondary institutions to recognize the level, nature, and discipline of study.

The Bachelor of Applied Technology (Honours) - Construction Management meets degree level standards in both subject matter and outcomes, as illustrated in Standard 1. The Bachelor of Applied Technology (Honours) - Construction Management program has been designed by subject matter experts in the School of Engineering & Technology, following a review of other construction management programs offered in Ontario and Canada. The courses have been developed by faculty members and subject matter experts who are familiar with degree level study in the field, and industry PDAC members in the construction management field. The degree title conveys accurate information about the degree level, nature of the degree, and discipline or subject of study (*Standard 8, Benchmark 1* (PEQAB Manual 2023)).

The program name, Bachelor of Applied Technology (Honours) - Construction Management satisfies the Board's Nomenclature Standard for the following reasons:

- The degree is clearly stated as Bachelor of Applied Technology (Honours) - Construction Management and is widely recognized in Canada as a standard naming convention for this credential.

- *Construction Management* indicates the specific focus of this degree, providing insight into the specialized degree level education students gain within the program.

- *Construction Management* is a nomenclature recognized by the relevant sector that describes the subject specialization of the undergraduate degree. The nomenclature will allow graduates to clearly express the nature of the degree to future employers. It will also aid Conestoga in describing the program to placement sites and locations, as well as to prospective students.

- The inclusion of *Management* in the nomenclature emphasizes a critical aspect of the nature of the degree: the interrelationship of both technology and business knowledge that students will acquire that serves as the base for evidence-based decision making that considers the broader scope of the construction project.

- The nomenclature accurately states the degree's intent and discipline of study. The courses will be taught at a level of academic rigor commensurate with degree level study, as per the Ontario Qualifications Framework.

- The nomenclature was reviewed and approved with input from stakeholders, including faculty, the Program Development Advisory Committee, and sector supporters.

Standard 9: Internal Quality Assurance and Development

The continuous quality of the program is assured by effective quality assurance mechanisms for periodic evaluation.

Please refer to Section 5.3 Degree Program Review for details regarding degree development and academic program review, including links to the college's policies and procedures for periodic evaluation.

The institution's internal quality assurance processes ensure that curricula are appropriately designed and presented for all modes in which it is delivered (Standard 9, Benchmark 1 (PEQAB Manual 2023)). The development and delivery of courses are the responsibility of the program chair and coordinator. Conestoga's Degree Quality and Accreditation and Curriculum, Operations and Planning departments ensure that the courses are delivered per the conditions of consent, outlined by the Ministry and in accordance with PEQAB standards and benchmarks.

Course outlines and course learning outcomes are reviewed with curriculum consultants prior to delivery. Course outlines identify:

- method(s) and frequency of evaluation of student performance,
- resources to be purchased/provided for faculty and students, as well as classroom and equipment requirements,
- textbook requirements,
- course and unit learning outcomes,
- a list of the faculty qualified to teach the course, and
- faculty qualifications required to teach/supervise the course(s).

A dedicated curriculum consultant works with the subject matter experts to ensure the course description and learning outcomes are clear, appropriate to the baccalaureate level of learning, and align with the degree standard, program outcomes, and breadth outcomes of study. The consultants also ensure that methods of evaluation are appropriate to assess the intended outcomes and that the resources chosen include Canadian content, where appropriate and possible. More information on the mapping process used to ensure alignment of courses with the degree standard and program outcomes is provided in Degree Level (Standard 1) and Program Content (Standard 3) respectively.

Conestoga's philosophy of course and program development extends to developing online courses, that is, through a collaborative model that includes curriculum developers from the academic schools, curriculum consultants, online learning consultants, and other key

stakeholders to ensure that each course will meet the needs of students and incorporate best practices related to the delivery method.

Conestoga, with guidance from the Online Learning Centre (OLC), ensures that online courses meet standards from the Quality Matters Higher Education Rubric. The OLC works with the academic schools and faculty to develop courses with a team of experts in the areas of instructional design, online learning development, multimedia, faculty training and support, learning management system administration and support, and quality assurance.

The OLC maintains an internal quality assurance project checklist with a standard set of minimum requirements for the development of online courses to ensure alignment with the Quality Matters standards. The Sixth Edition of the Quality Matters Standards and Rubric reflects many of the PEQAB benchmarks for online delivery as they relate to the program delivery, capacity to deliver, quality assurance, and student protection standards. The rubric requires, for example, that:

- the delivery method is appropriate to course content and design,
- faculty and students have the necessary resources – including technological resources and minimum technical skills – to promote effective learning, and
- learning activities and technologies provide opportunity for interaction and support active learning.

Conestoga considers degree program review and revision central to the function of meeting the needs of community, employers, government, and students. Conestoga has implemented and published a policy and procedure for the periodic review of its degree programs (*Standard 9, Benchmark 2* (PEQAB Manual 2023)). Conestoga maintains a Program Quality Assurance Policy. Comprehensive review will be undertaken in preparation for Ministerial consent renewal.

This comprehensive program review comprises a) a program self-study undertaken, with student input, by faculty members and administrators of the program, b) a review by an external Program Evaluation Committee (PEC), and c) an institutional response to the PEC Report (*Standard 9, Benchmark 2* (PEQAB Manual 2023)). The process of reviewing degree programs is subject to an intentional approach and incorporates all administrative areas and operational functions of the college that are affected by and contribute to degree program design and delivery.

Program review and self-study include assessments such as:

- A review of program objectives, including an up-to-date environmental scan,
- Assessment against the degree level standards,
- Assessment of admissions, promotion, and graduation requirements,

- Review of program content, evaluation of currency and relevance,
- Review of program outcomes and integration throughout the courses,
- Assessment of the college's capacity to deliver overall,
- Review of co-op placements and student/employer satisfaction,
- Review of the graduation and employment outlook,
- Review of credential recognition, accreditation, and
- Assessment of human and physical resources.

Self-study activity is coordinated through the Degree Quality and Accreditation office whose staff members work with faculty, chairs, students, college resources and services, and the Program Advisory Committee (PAC) to gather feedback and prepare the documentation for Ministerial consent renewal.

Once the Self-Study documentation is complete, Degree Quality and Accreditation coordinates a degree program evaluation review and site visit. The Program Evaluation Committee (PEC) is chaired by an external program reviewer, and the committee includes a second external subject matter expert, a senior academic peer, and a student or recent grad. Based on their findings, the PEC creates a recommendation report, and the degree program replies with an action plan response that is brought forward to Academic Forum for review. In cases where the PEC, Academic Forum, and the applicable school find that major changes to the program design and delivery are necessary, the school will create a redesign report. This redesign report will be reviewed by the PEC and their recommendations will be brought to Academic Forum for approval. Once approved, the proposed redesign of the program and supporting documentation will be included in the renewal submission to the Ministry.

The self-study, redesign report (if applicable), the PEC report, action plan response, and documentation reflecting how the degree program meets the degree-level standards and benchmarks, are all included in the renewal submission to the Ministry and PEQAB, occurring every five to seven years, depending on the consent approval.

A map reflecting the degree program review and renewal process is provided in Appendix J: Degree Review and Renewal.

Conestoga uses appropriate instruments, processes, and information to ensure the effective management and continuous improvement of the program and its delivery, including, for example, course evaluations and faculty feedback, student achievement demonstrations, faculty and instructor performance, currency and engagement with scholarship, research, or creative activity (*Standard 9, Benchmark 3* (PEQAB Manual 2023)).

Over the years, Conestoga has developed well thought out procedures and approaches to degree level education, concentrating on bachelor's degree programs that meet specific needs of students, employers, professional associations, and the community. Conestoga's leadership in program quality and graduates has been recognized internationally. In 2018, the Council for Higher Education Accreditation (CHEA) International Quality Group (CIQG) named Conestoga an inaugural recipient of the CIQG Quality Award which recognizes outstanding performance of higher education providers in meeting international quality principles.

Conestoga's ongoing quality processes are informed by the CQAAP standards, a set of comprehensive institutional quality assurance evaluation benchmarks. The standards focus on the college quality systems in areas such as program life cycle, program quality management systems, and availability and allocation of college-wide resources. The 2020 Quality Audit at Conestoga indicated we met or exceeded the expectations of all six standards, with a quality system rating of "mature." This result demonstrates Conestoga's commitment to quality and the breadth and depth of quality assurance mechanisms and systems throughout the institution.

After Conestoga receives consent to deliver a degree program, a regular review cycle is initiated. Annual Program Reflection (APR) processes include assessment of curricular content and currency, program design, program delivery, effectiveness of teaching and learning, and resources for delivery including the consideration of degree breadth requirements, as demonstrated by resources to support the completion of APRs in Appendix K: APR Resource Guide. The results are used to monitor action items for degree programs year-to-year and provide data that is shared with academic and service areas to help inform trends and best practices across the college.

The Office of Institutional Research and Planning provides a 'Program Statistics Report' to support annual reflection. This report includes the previous years' program application patterns, program retention, intake demographics, student satisfaction KPI, graduate employment KPI, and graduate satisfaction KPI. Other information provided by Institutional Research for review and analysis includes program retention in each year of the program, grade distribution and course completion rates (failures and withdrawals) for each term the course is delivered. Any program changes identified in the APR, beyond the changes permitted during a consent period, must be submitted for consideration by the Minister of Colleges and Universities.

Student Appraisal of Teaching (SAT) is a survey process used for obtaining feedback from students to enhance the performance of teaching at Conestoga. The SAT process has two components: Quick-SAT and Full-SAT. The Quick-SAT is 5 questions, occurs during week 5 of the course and provides early feedback to faculty about the student experience. The Full-SAT is 44 questions and occurs later in the semester; a summary of the results goes to the academic

manager to be shared with the faculty member. About one-quarter of the faculty is typically appraised each term. All full-time faculty have a SAT review at least once every two years. Part-time faculty may be reviewed more frequently.

Representatives from all relevant stakeholder groups at Conestoga are involved in the ongoing quality assurance procedures (*Standard 9, Benchmark 4* (PEQAB Manual 2023)). Degree program review is conducted within a context of internal and external scrutiny and follows a well-defined path from initial discussion to final implementation.

Conestoga's ongoing quality assurance procedures, or APR, are conducted by the school with support from Program Review Consultants, Degree Program Consultants, Curriculum Consultants, and the Office of Institutional Research and Planning. Program delivery partners and service areas such as the School of Interdisciplinary Studies, the Co-op Education, Career Services, and Work Integrated Learning departments, the Library, the Registrar's Office, the Marketing Department, and the Online Learning Centre are consulted, as necessary. Feedback is also solicited from industry, sectors, and students.

Each degree program conducts Program Advisory Committee (PAC) meetings a minimum of twice per year. Members of the PAC include former members of the Program Development Advisory Committee (PDAC), other academics and industry representatives, student representatives, faculty, and co-op representatives. PAC members advise on various aspects of the program and recommend strategies to meet future employer and labour market needs.

Mechanisms for student feedback are described fully in Student Input (section 4.4.2).

Standard 10: Academic Freedom and Integrity

The organization maintains an atmosphere in which academic freedom exists and in which students and academic staff are expected to display a high degree of intellectual independence. Academic activity is supported by policies, procedures, and practices that encourage academic honesty and integrity.

Conestoga previously submitted policies pertaining to academic freedom and integrity, assessed by an expert panel and the Postsecondary Education Quality Assessment Board (PEQAB). They determined that Conestoga's academic activity is supported by policies, procedures, and practices that encourage academic honesty and integrity; that Conestoga maintains an atmosphere in which academic freedom exists and in which students and academic staff are expected to display a high degree of intellectual independence; and that Conestoga meets the Board's standard and benchmarks for academic freedom and integrity, published in the *Manual for Public Organizations (Including Ontario Colleges): 2023*.

10.1 Academic Freedom

Conestoga has policies on academic freedom that recognize and protect the rights of individuals in their pursuit of knowledge without fear of reprisals by the organization or by third parties, and that protect the right of individuals to communicate acquired knowledge and the results of research freely (*Standard 10, Benchmark 1* (PEQAB Manual 2023)). Academic freedom is ensured by Conestoga's Academic Freedom Policy in addition to various human resources policies and procedures (Employee Code of Conduct) and collective bargaining agreements (Article 13: Copyright and Academic Freedom in the Academic Employees Collective Agreement) pertaining to academic roles at the college.

10.2 Academic Honesty

Conestoga has appropriate policies pertaining to academic honesty and procedures for their enforcement (*Standard 10, Benchmark 2a* (PEQAB Manual 2023)). Policies and procedures pertaining to academic honesty include, but are not limited to, the Academic Freedom Policy, the Academic Offences Policy and Academic Offences Procedure.

Various channels outline the policies and procedures concerning academic honesty (*Standard 10, Benchmark 2b* (PEQAB Manual 2023)). Conestoga ensures faculty's understanding of the various policies and procedures related to academic honesty through the Employee Code of Conduct and through public availability of the academic policies and procedures. These ideals are reinforced for students during their orientation to the college, within their program handbook, within online accessible course shells for every course in which they are enrolled, and through additional resources via various student services and online resources.

Conestoga's Academic Integrity website is one example of the supports accessible to students and faculty at the college. The library has a dedicated Academic Integrity Coordinator to support both students and faculty with workshops and individual consultations.

10.3 Intellectual Property, Ethical Research, and Copyright

Conestoga has appropriate policies on the ownership of the intellectual products of employees and students (*Standard 10, Benchmark 3* (PEQAB Manual 2023)). Conestoga maintains an Intellectual Property policy for products created by employees and students. The library provides information to support students' understanding of their rights and responsibilities of copyright and intellectual property.

Conestoga upholds formal ethical research standards (*Standard 10, Benchmark 4* (PEQAB Manual 2023)). Where the organization conducts research in Canada that involves the management of research funds, the use of animals in research, or human research participants, the policies of the *Canadian Institutes of Health Research*, the *Natural Sciences and Engineering Research Council of Canada*, and/or the *Social Sciences and Humanities Research Council of Canada* will govern the research. Policies and procedures pertaining to Research are on record with PEQAB and can be found at Conestoga's Policies and Procedures page (click on Applied Research tab).

There are appropriate policies and procedures at Conestoga concerning compliance with copyright law (*Standard 10, Benchmark 5* (PEQAB Manual 2023)). Conestoga maintains a Copyright policy to maintain compliance with copyright law. The library has a dedicated Copyright Coordinator and a Copyright Technologist to support faculty and students with compliance including Copyright at Conestoga online resources, workshops, and individual consultations.

10.4 E-learning Components

Conestoga has appropriate policies and procedures to address copyright and intellectual property issues related to online learning, e.g., digital rights management and the use of object learning repositories (*Standard 10, Benchmark 6a* (PEQAB Manual 2023)). Conestoga's policies related to copyright and intellectual property also apply to e-learning, blended learning, and distance learning components.

Conestoga assures the authentication of student identity and the integrity of student work (*Standard 10, Benchmark 6b* (PEQAB Manual 2023)) and assures the verification of student identity for coursework and examinations, and for the control of examinations, including but not limited to security, time limits, and the selection of proctors/invigilators (*Standard 10, Benchmark 6c* (PEQAB Manual 2023)).

eConestoga is the platform which houses content for classroom enhanced, hybrid, and fully online courses. It is a web-based learning management system powered by Brightspace

(Desire2Learn) that facilitates access and delivery of online course content, course-related communications between faculty and students, and administration of courses. eConestoga provides a reliable, sufficient, and scalable system to meet current and projected needs, including:

- A robust and secure technical infrastructure with backup provisions,
- 24 hour, 7 days per week access to LMS content and technical support,
- Well-maintained, current and appropriate hardware, software and other technological resources, and
- Risk assessment and planning that includes a disaster recovery process, back-up, and storage of data.

Section 3 of the Online Learning Technology Policy outlines the safeguards Conestoga undertakes. eConestoga is accessed using an authenticated student or employee log-in as assigned by Conestoga. This ensures the security of students' confidentiality and privacy associated with assessment, evaluation and dissemination of results. It also verifies students' identities for control of examinations, including security, time limits, and the selection of proctors.

Standard 11: Student Protection

The organization values and upholds integrity and ethical conduct in its relations with students.

Conestoga values and upholds integrity and ethical conduct in its relationships with students. Conestoga has previously submitted policies pertaining to student protection, assessed by an expert panel and the Postsecondary Education Quality Assessment Board (PEQAB). These policies are on file with PEQAB.

11.1 Public Information

Public reports, materials, and advertising are produced in a thorough, accurate, and truthful manner (*Standard 11, Benchmark 1* (PEQAB Manual 2023)). All college reports are published and publicly accessible on Conestoga's corporate website. This includes, but is not limited to, Conestoga's College Reports and program information webpages which also host degree faculty biographies.

Key information about the organization's policies and programs is readily available to students and the public (*Standard 11, Benchmark 2* (PEQAB Manual 2023)). Conestoga's corporate website includes an About Conestoga section which includes, but is not limited to, information about:

- college profile and statistics
- college administration
- college governance
- policies and procedures
- campuses
- programs

When the Bachelor of Applied Technology (Honours) - Construction Management receives consent to deliver, further information will be available related to the program, including:

- Academic credentials/bios of faculty and senior administrators,
- Description of the degree program, and
- individual descriptions of all courses in programs and their credit value.

This website is available to students and the public on an ongoing basis.

11.2 Student and Consumer Interests

Conestoga College protects student and consumer interests through ethical business practices in its student recruitment practices (*Standard 11, Benchmark 3a* (PEQAB Manual 2023)):

- Admissions Policy
- Admission Procedure
- Re-admission Procedure
- Credit Transfer Policy
- Credit Transfer Procedure
- Prior Learning Assessment and Recognition (PLAR) Policy
- Prior Learning Assessment and Recognition (PLAR) Procedure

Conestoga College protects student and consumer interests through ethical business practices in its resolution of student's academic appeals, complaints, grievances, and/or other disputes (*Standard 11, Benchmark 3b* (PEQAB Manual 2023)):

- Academic Dispute Resolution and Appeal Policy
- Academic Dispute Resolution and Appeal Procedure
- Admission Decision Dispute Resolution and Appeal Procedure

Conestoga College protects student and consumer interests through ethical business practices in its security of academic student records (*Standard 11, Benchmark 3c* (PEQAB Manual 2023)):

- Conestoga's alignment with the Freedom of Information and Protection of Privacy Act, R.S.O. 1990, c. F.31
- Conestoga's authority granted by the Ontario Colleges of Applied Arts and Technology Act, 2002
- Student Records resources provided at: Admissions: Grading & Transcripts

Conestoga College protects student and consumer interests through ethical business practices in its payment schedule of fees, charges, and refunds (*Standard 11, Benchmark 3d* (PEQAB Manual 2023)):

- Student Fees Policy
- Student Fee Invoicing and Payment Procedure
- Program and Course Withdrawal and Refund Procedure
- International Student Withdrawal and Refund Procedure
- Admissions: Tuitions & Fees

Conestoga College protects student and consumer interests through ethical business practices in student dismissal or withdrawals (*Standard 11, Benchmark 3e* (PEQAB Manual 2023)):

- Academic Advancement and Achievement Policy
- Discontinuance Procedure

- Promotion Decision Procedure
- Baccalaureate Degree Promotion and Graduation Policy
- Academic Offences Policy
- Academic Offences Procedure
- Clearance of Academic Deficiency Policy
- Clearance of Academic Deficiency Procedure

Conestoga College ensures that students are aware of its policies and procedures related to student life and responsibilities (*Standard 11, Benchmark 4* (PEQAB Manual 2023)). Policies and procedures are communicated to students through the following:

- College Policies and Procedures
- Student Guide
- Conestoga 101 course
- Program Handbook
- Orientation

In addition, Conestoga has implemented an electronic capture of Student Acknowledgement regarding awareness of academic policies, procedures, and related program information. A Student protection Acknowledgement confirmation pop-up appears on the Student Portal after a student logs in. A PDF directs students to the location of related policies, procedures and program information. Students confirm that they have been duly informed by Conestoga and attest to that fact by clicking the acknowledgement box provided in the pop-up. Date and time of the student's acknowledgement are captured in the Student Portal database. Conestoga is able to run reports as necessary.

Once the acknowledgement box has been clicked, the student can proceed to enter the Student Portal. An email is automatically generated and sent to the student confirming their acknowledgement. The Student Protection Information PDF is attached to the email for their reference.

The Student Protection Acknowledgement confirmation pop-up appears to all students once per academic year. The material that appeared last academic year follows.

STUDENT PROTECTION ACKNOWLEDGEMENT CONFIRMATION

Understanding Conestoga's policies and procedures pertaining to academic matters is important for you. For your convenience, Conestoga has created a list of the policies, procedures, and locations where they can be accessed. To view them, please follow the link below to the Student Protection Information List pdf.

To confirm that you are aware of and acknowledge Conestoga's policies and procedures pertaining to academic matters, please click Accept in the box provided.

Once you have confirmed, you may proceed to enter the Student Portal. You will be sent an email confirming your acknowledgement.

Program completion requirements will be addressed at Orientation and are included in the Schools' program handbooks.

Students are expected to review and monitor their own progression through the program requirements via their Student Portal. Program Coordinators and faculty members are available for academic counseling throughout a student's progression in a program.

11.3 E-learning Components

For blended, hybrid, or online delivery, students are informed about the modes of delivery available to them (*Standard 11, Benchmark 5a* (PEQAB Manual 2023)). This information is included on the program's institutional webpage, as well as during the course selection process where the delivery method of each course is clearly indicated.

For blended, hybrid, or online delivery, students are informed about the technological requirements of participation and the technical competence required of them (*Standard 11, Benchmark 5b* (PEQAB Manual 2023)). These requirements are addressed in the Quality Matters rubric, against which all online courses developed for degrees are checked, in General Standard 1 – Course Overview and Introduction:

> 1.5 Minimum technology requirements for the course are clearly stated, and information on how to obtain the technologies is provided.
>
> 1.6 Computer skills and digital information literacy skills expected of the learner are clearly stated.

This information is presented in every course developed by the Online Learning Centre in the Course Information module on the topic page called *Required Resources and Technical Skills*.

For blended, hybrid, or online delivery, students are informed about any additional costs, beyond tuition and ancillary fees, associated with e-learning aspects of the course or program delivery (*Standard 11, Benchmark 5c* (PEQAB Manual 2023)). The college provides registered students with wireless and hardwired Internet access, access to free software downloads, and server-based access to several program-specific software applications while on campus. Each student is responsible for any downtime associated with their device.

For blended, hybrid, or online delivery, students are informed about the kind of support and protection available to them (*Standard 11, Benchmark 5d* (PEQAB Manual 2023)). Learner interaction and learner support are key elements of the Quality Matters standards (General Standard 7: Learner Support) to which Conestoga's online courses adhere. The Course Information module in each online course articulates or links to:

- A clear description of the technical support offered and how to obtain it,
- An explanation of how the institution's academic support services and resources can help learners succeed in the course and how to obtain them, and
- An explanation of how the institution's student services and resources can help learners succeed and how learners can obtain them.